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The seal of The Chicago Medical School is a circular emblem. It features a central caduceus (a staff with two snakes entwined and wings at the top) superimposed on a background of a classical building facade. The words "THE CHICAGO MEDICAL SCHOOL" are inscribed around the perimeter of the seal, with a small star positioned between "THE" and "CHICAGO".

QUARTERLY

THE CHICAGO MEDICAL SCHOOL

VOLUME 1, No. 2

MARCH 1941

Dear Alumnus:

The publication of the second issue of THE QUARTERLY marks another stage in the growth of this youngster which was born to The Chicago Medical School on December 16th, 1940. Since then, it has gained weight in the form of eight more pages, and is getting to look handsomer at each appearance. The early increase in weight is a good indication of the future course of the health of our young journal, but like all infants, it needs to be nurtured very carefully, both internally and externally. We, the students, from the highest center in the (editor's) brain to the lowliest red blood corpuscle of the circulation staff, are functioning perfectly, and time alone will allow us to transform THE QUARTERLY into a fully grown adult that will take its place among other leading medical school journals. However to reach

this maturity, THE QUARTERLY requires all the external nourishment it can receive in the form of editorial contributions and subscription support from its godfathers, the Alumni of The Chicago Medical School.

It is especially important at this time that there be a strong Alumni Association of the Chicago Medical School and that THE QUARTERLY remain with us as a permanent publication. Consequently, every alumnus should feel it his duty to become a duly enrolled member of the Alumni Association by sending in his three dollar yearly membership fee. This fee will entitle you to membership in the Alumni Association and a year's subscription to THE QUARTERLY. May we enjoy the pleasure of your very prompt action?



QUARTERLY

THE CHICAGO MEDICAL SCHOOL

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THE CHICAGO MEDICAL SCHOOL
710 SOUTH WOLCOTT AVENUE
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OFFICE OF THE DEAN

February 14, 1941

To the Editor,
The Chicago Medical School Quarterly.

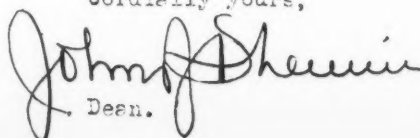
Dear Sir:

On several occasions, in the past, a periodic publication of The Chicago Medical School has been attempted. There is no doubt that each was planned and executed with unquestionable sincerity and genuineness of purpose on the part of our predecessors in an effort to create, maintain and perpetuate a journal which would record chronologically the progress of The Chicago Medical School as well as reflect the efforts, tendencies, thoughts and aspirations of the component parts of the institution. Without casting any reflection on the past, and with due acknowledgment of those who have preceded us, it is regretful that the publications did not survive.

It would not be surprising, then, that with the institution of the new publication, "The Quarterly", there should be some thought in some quarters whether the present publication will not meet the fate of those of the past. On the contrary, "The Quarterly" breathes with and radiates confidence, stability and perpetuity. "The Quarterly" is not only by far the finest publication ever attempted in our institution; it not only is pleasing to the eye and wholesome in its contents, but it is a truly complete periodical, reflecting the academic, ethical and social spirit in the march of progress of our institution. Reports received to date indicate its enthusiastic reception and wide acclaim.

I heartily congratulate you and the editorial staff on your splendid accomplishment, and to "The Quarterly" I say, "May you live on forever."

Cordially yours,


Dean.

Editorials

From various parts of the country come news items of retrenchments being made in the educational system in order to enable greater expenditures on war equipment. Accusations of minority and subversive control of student bodies of certain institutions creates in the public mind the feeling of wasteful expenditures of the people's money and this accentuates the drive toward further retrenchment.

Medical education does not initially lend itself to such processes. But we wonder, as the lists of reduced budgets are made known, how long it will be before every medical school will feel the effect, how long before research awards will begin to diminish, scholarships will be pared and teaching staffs decreased.

We cannot prophesy, but certainly this is more than merely within the realm of possibility. Education, whether it be medical or non-scientific, is not a luxury in the modern world. It cannot and should not be disposed of in any emergency. Democratic education of the people is the surest way to make good citizens, not only willing but able to solve the problems of democracy. The capable education of medical students is the best way to help those citizens keep healthy. An uninhibited educational program throughout the nation is therefore an essential to the defense of the health and welfare of the country.

The conditions in the world which faced us as members of the medical profession and as citizens, when the first issue of *THE QUARTERLY* went to press have become much more intensified in the interim.

Today, America is nearer the brink of war than at any time in the last twenty-three years. With the passage of each day, the forces involved gain greater tempo, finally to fly off centrifugally into unknown realms. The consequences for the involvement of our country into the debacle will be profound and the leaders of the land are aware of all the reactions it may engender.

Certainly, it seems most fitting that in the experiences that lie ahead, care of the nation's health must be a bulwark. Both as physicians and citizens, it must be our responsibility to advance — not only main-

tain — the well-being of our people and to develop the health services of the nation, state and city.

The leaders of our own profession are cognizant of the cry of the people for adequate health defense. They know that national defense includes health defense. Various plans by different medical groups have been offered for obtaining this. Every doctor and medical student should consider each plan and decide which most adequately achieves the goal sought.

Whatever the plan, one important fact must be borne in mind. The security which the medical profession will gain by the adoption of such a plan is only secondary to the paramount feature that the health of the nation must be preserved.

The birth pangs are over. *THE QUARTERLY* has survived its critical first issue, and we are now on our way. We promised that there would be changes in the future. A few of those changes have already taken place. Such changes are significant of a willingness to experiment and a desire to forge ahead. Such changes are indicative of growth and developing maturity. A hesitancy to seek new ways, to accept and incorporate new ideas, to be curious, is a cardinal sign of senility.

Wherever individuals or institutions grow weary, whenever they show an unwillingness to seek a new and better path, there you will see decay. Are we consciously willing to accept the responsibility of the implications of these statements?

Within the pages of this issue are articles written by people within the medical profession. Many of the ideas expressed may not coincide with the ideas of the editorial board. But every view expressed is worth investigating and thinking over. They may antagonize your own opinions. They may express the very thoughts that you have had for days, months or years; or they may conflict with the very dogmas that have unconsciously pervaded your scientific attitude. Whatever they be, they do deserve your thought. This signifies growth, the basis of progress.

We on the *Quarterly* staff want to see the journal continue to change and develop. We want it never to grow old.

PHYLOGENESIS OF THE HUMAN TEMPORO-MANDIBULAR ARTICULATION

DR. HARRY SICHER

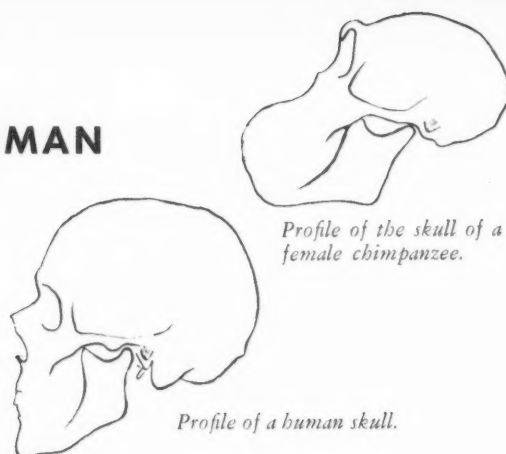
*Associate Professor of Neuro-Anatomy,
The Chicago Medical School*

Structure and function of the mandibular articulation in man are among the few qualities peculiar to man only. A well developed articular eminence is found only in man, and the peculiar combination of a rotating and sliding movement in opening the mouth is a purely human feature. The Orang and chimpanzee have no articular eminence at all and the gorilla shows just a vestige of this bony structure. By extensive studies of an adult female chimpanzee in the Zoological Gardens of Vienna, I could ascertain that this ape opens the mouth in a hinge movement. The forward-sliding movement as an independent movement can be observed on this ape, too. It is done mostly unilaterally and alternately in mastication.

The reasons for both these above mentioned peculiarities of the human mandibular joint are, in my opinion, consequences of the upright posture of man. The adaptations to this posture on the skull are, as far as our question is concerned, twofold: (1) The base of the skull becomes bent to such a degree that the plane of the foramen magnum looks down and forward; even in the great apes, it is still directed down and posteriorly. (2) To create a larger area for the attachment of the sternocleidomastoid muscle, which is now the carrier of our head, the mastoid process develops—another structure peculiar to man.

The angling of the base of man's skull and the development of the large mastoid process create as a consequence a very considerable narrowing of the space posterior to mandibular articulation and upper part of the mandibular ramus. Figure 1 shows clearly that in the chimpanzee the space behind the mandible is absolutely free, whereas in man (figure 2) the mastoid process protrudes downward just behind the upper part of the ramus of the lower jaw. The functional significance of this narrowness is a drastic limitation of the excursion of the mandible in a pure hinge movement.

It has to be pointed out that the mandibular articu-



Profile of the skull of a female chimpanzee.

Profile of a human skull.

lation in man is a free joint movable in all directions. There is no anatomical structure which would prevent a hinge movement or force the coupling of rotation and sliding. In fact, I was able to show that one can learn to open the jaw in a rotating movement eliminating the thrusting component altogether. But even after practicing, the hinge opening is possible, at best, to only two-thirds of the normal maximal opening, because in this movement the soft tissues behind the articulation are very soon compressed between mandible and mastoid process thereby blocking the further movement. And just this restriction of the hinge movement of the human jaw is the reason why in man the sliding movement in an anterior direction is added to and coupled with the rotating movement. This is done by functional adaptation and the acquisition of a different neuromuscular coordination in the movement of the lower jaw.

The muscles which open the jaw in a pure hinge movement are the suprahyoid muscles. The external pterygoid muscle has nothing to do with this movement and is used only in the thrusting movement of the jaw bilaterally or in the grinding movement unilaterally and alternately. In these movements the external pterygoid acts synergistically with the closers of the mouth, the masseter, internal pterygoid and temporal, to safeguard the contact between lower and upper teeth. But after the development of the mastoid process, when the hinge movement of the lower jaw was blocked and the opening of the mouth to the necessary extent was no longer possible, the external pterygoid could be effectively used in relieving the compression of the soft tissues behind the jaw and liberating the mandible again by pulling it forward during the phase of opening. In being stimulated to act in synergism with the suprahyoids, the external pterygoid acted now antagonistically against the closers of the mouth. That the external pterygoid changed its synergists and antagonists is

not surprising, because we know from many other examples that a given muscle might act in one movement together with, and in the next against another muscle.

The double action of the external pterygoid in unilateral or bilateral forward movement and in the opening movement of the lower jaw is easily explained by the fact that the actual effect of the action of a given muscle is dependent upon the behavior of other muscles or muscle groups. Simultaneous tension of the other muscles of mastication and relaxation of the suprahyoid muscles makes the external pterygoid a thruster of the mandible. Simultaneous tension of the suprahyoids (together with the infrahyoids as fixators of the hyoid bone) and relaxation of masseter, internal pterygoid, and temporal, makes the external pterygoid an opener of the mouth.

A very good way of observing the action of the external pterygoid is the following experiment. If one puts a finger between the neck of the mandible and the mastoid process just below the cartilaginous auditory meatus, one can easily feel how this space is narrowed when the mouth is opened in a hinge movement. But in the moment the external pterygoid is brought into play, this narrow space is suddenly widened and the palpating finger sinks deep into the retromandibular fossa.

This newly acquired neuromuscular combination of the original openers of the mouth with the external pterygoid led as a consequence to the development of the articular eminence as a fulcrum for the mandibular head. The reason for this is the change in the movement of the mandible from a rotating into a rotating and progressing movement, the direction of which was inclined forward and downward.

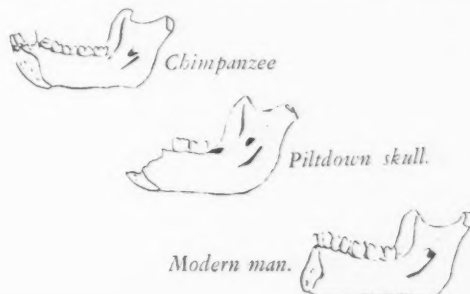
If we accept this explanation the following statement is permissible: the presence of an articular eminence is evidence for a rotating-sliding movement of the lower jaw characteristic for recent man.

In comparing a human mandible with that of a chimpanzee or orang, another difference can be observed: the relation of the mylohyoid groove to the mandibular foramen. In man this groove starts on the posterior inferior border of the entrance into the mandibular canal, whereas in the chimpanzee and orang a distance of 3 to 4 millimeters separates this groove from the posterior border of the mandibular foramen. The reason for this difference is, in my opinion, again to be sought in the different opening movements of the mouth in man and ape. We can regard the superior end of the mylohyoid groove as the point of entrance of the mylohyoid nerve into

the bone, because the nerve is immovably fixed in this sulcus by a connective tissue lamella which closes the groove to a canal. At least in man this connective tissue very often ossifies.

As long as the mandible moves during the opening of the mouth in a hinge movement, all the points of the bone rotating in circles around the axis retain the movement the same distance from the axis. The alveolar nerve emerging from the skull through the oval foramen, which is situated almost exactly in the common axis of the two tempora-mandibular articulations, will therefore not be stretched even when its two branches enter the mandible at distant points.

After the acquisition of the complicated rotating-sliding movement in man, only one point can be the point of least movement. It is interesting that for a long time the mandibular foramen had been known as the relative resting point of the mandible. Some authors even went so far as to assume that the common axis of the complicated opening movement of the human jaw runs through these foramina. This latter conclusion is not correct. One can easily show that the mandibular foramen moves slightly downward when the mouth is opened, whereas all the points above it move at the same time forward, the points below backward. To accommodate this downward movement the alveolar nerve runs in a S-shaped curve from oval to mandibular foramen. The slack of the nerve is taken up in the opening movement of the jaw and the nerve straightened. The swinging movement of all the other points of the ramus could only lead to a migration of the points of entrance of both alveolar and mylohyoid nerves to the point of relative rest and only here could the common entrance for both nerves be established. The acquisition of the rotating-sliding movement is, therefore, responsible for the fact that in man



Medial view of right
half of mandibles.

the mylohyoid groove begins at the mandibular foramen. These considerations can again be used for a statement: a jaw into which alveolar and mylohyoid nerves enter at a distance from each other is moved in a purely rotatory movement. (It might be pointed out that the opposite conclusion, that the entrance of these nerves into the bone on one and the same point is characteristic for a rotating-sliding movement, cannot be drawn.)

The two statements, (1) that a well developed articular eminence is proof for a rotating-sliding movement, and (2) that a distance between the mandibular foramen and upper end of mylohyoid groove is proof for a purely rotating movement of the lower jaw, can be applied in deciding the question whether the fragments of a skull and lower jaw known as Piltdown man or Eoanthropus Dawsoni are the remains of one individual or not.

These fragments were found in Piltdown in southern England in the years 1911 to 1913. They belong geologically to the late Pliocene age, and are therefore from two to two and a half million years old. The fragments found were: the left and a great part of the right parietal bone, two fragments of the occipital bone, the complete left temporal bone, the almost complete right half of the mandible with first and second molar in situ, and an isolated tooth. All the different attempts of a reconstruction of the skull proper showed the picture of an individual which generally could be considered as a homo sapiens type although with some primitive characteristics. The shape of the supraorbital and frontal region—no supraorbital torus, rather high forehead—tend to stigmatize this skull as that of modern man.

The mandible, on the other hand, appears in all details ape-like. It is doubtful whether it is more closely related to the orang or to the chimpanzee. What is left of the mental region shows not only the complete absence of a positive chin but the presence of a simian plate. This is the part of the mandible which, lingually concave, projects into the mandibular arch in its anterior part. The illustration (Fig. 3), giving in outline the right half of the mandible of a chimpanzee, the Piltdown mandible, and that of a modern man, make a further description unnecessary.

From the very beginning the investigators were split into two different groups. Some believed that the skull was that of a primitive but modern man, the mandible that of an anthropoid ape. The majority maintained that the skull and the mandible were parts of one individual. The arguments for this lat-

ter assumption are mainly negative. It seemed very improbable that the remains of a human skull and the lower jaw of an ape could be found together, the more so because up to this time no anthropoid had been found in England. They were strengthened in their belief a few years later when a second discovery was made in the same neighborhood: part of a frontal bone and a molar. The first conformed in all details to the skull of Piltdown I, and the molar was a replica of the one found in the Piltdown mandible.

So they set to work to combine this highly developed skull, which must have contained a large and highly developed brain, with a mandible not only primitive but positively ape-like. At the time when Sinanthropus, the Peking man, lived in Asia, a species of man in the antipodes would have possessed a skull of infinitely higher development than his Asiatic contemporary, but a mandible of indefinitely lower development than Sinanthropus. Notwithstanding this obvious difficulty, the new genus of Eoanthropus was created to fit this almost freakish stage in man's evolution.

Confronted with the dilemma either to accept this "freak" or to assume that, against all probability, fragments of the skulls of two human beings and fragments or teeth of lower jaws of two apes were buried together, some authors hinted at the possibility of a fraud.

Strong as the arguments against the existence of this Eoanthropus are, they cannot be regarded as more than intuitive or subjective. But if we could find anatomical details on skull and mandible which actually contradict each other, then we would have facts on hand against which all the laws of probability or rather improbability would have to be silent.

And I think that such contradictory evidence really is present. The temporal bone of the Piltdown skull shows a well developed articular eminence. It can be taken as indication that this individual moved his lower jaw in the rotating-sliding fashion characteristic for recent man. The mandible shows, among other simian features, mandibular foramen and mylohyoid groove far apart from each other. This can be taken as indication that this mandible was moved in a hinge joint as far as the opening movement was concerned.

The two articulating bones, therefore, show details which, functionally evaluated, exclude the possibility that *this* mandible articulated with *this* temporal bone. The skull is that of a primitive type of recent man, the mandible is that of an anthropoid ape.

THE PHARMACIST'S DILEMMA

RUDOLPH BROMBERG, B.S., R.Ph.

A recent survey throughout various parts of the country revealed the fact that 250,000,000 prescriptions are filled annually in the United States. From this figure, we may derive the importance of the prescription in the practice of medicine. The prescription is just as important in the medical field as is the diagnosis, for when the diagnosis is made the task of the physician is only half finished. He is then confronted with the problem of selecting the proper drugs or ingredients to make up a prescription which will complement his diagnosis in the treatment of the specific condition.

Many of today's practicing physicians cannot fully appreciate the value of a thorough knowledge of the forms and actions of drugs, and, therefore, do not employ these in their practice; they rely instead upon the proprietary preparations which are continually being put forth on the market.

I do not want to discount totally the value of these preparations, for some are very fine therapeutic agents. On the other hand, others are absolutely valueless. Another disadvantage of proprietaries is their exorbitant price. However, the physician can easily remedy this by prescribing medicaments which must be prepared by the pharmacist, who rates his prices according to the ingredients involved.

Primarily, due to the incentive to prescribe ready-made preparations, the physician tends to forget that the United States Pharmacopoeia and the National Formulary contain hundreds of drugs and chemicals which through experimentation and continuous use have proved their efficacy in the treatment of disease.

The doctor who fifty years ago practiced neurology, obstetrics, gynecology, otolaryngology and urology plus the other phases of medicine, has become extinct due to specialization.

The modern theory of reasoning seems to be; since I am a specialist in otolaryngology, is it necessary that I know about the therapeutic agents used in urology? This question may be answered by suggesting that the body be looked upon as a whole rather than as individual parts. The heart specialist knows that when he treats a heart ailment he must always keep in mind the secondary kidney effects which may also be present, and therefore his knowledge of urology should not be too limited. In like manner, the other special-

ties in medicine all link up with one another as do the separate pieces of a jig-saw puzzle.

The practitioner must have a thorough knowledge of pharmacology, materia medica, and chemistry in order to write accurately prescriptions having a medical value. He must know the various incompatibilities of drugs and above all should know the exact dosage of all the drugs he prescribes. He must keep in mind the solubilities of the chemicals and drugs, for if total solution is not obtained the patient does not derive the full benefit of the treatment. In the case of external preparations, such as ointments, he should always employ the proper vehicles so that the resultant preparation will be smooth and easy to apply. His internal prescriptions should be palatable and pleasing to the eye, for these factors play an important part both psychologically and also in the manner of administration. This is illustrated best in children, for if the preparation is pleasing to the sense of taste the child will take it less reluctantly, whereas, with a bad-tasting concoction the child will squirm and resist, thereby losing almost completely the benefit of the medicament. This reaction may stimulate nervous reflexes which, in turn, may even cause emesis and aggravate the existing conditions.

(Continued on page 35)



THE ALLERGIC CHILD

ELI RUBENS, M.D.

Assistant Professor of Pediatrics, Chicago Medical School

The allergic child has become so important a factor in the evaluation of the diseases of childhood in recent years, that I feel as so many other pediatricians do, that we should be more familiar with the general picture of this type of child, and then only will we be able to treat him properly. Allergy may be defined as a natural sensitiveness of the human organism to a chemical or physical substance which is harmless to most persons. Von Pirquet and Schick coined the term allergy to describe the hypersensitive reactions observed with sera and infectious agents in man. The term has now been broadened to include reactions to food, animal dander, pollens, drugs, and many other substances.

The old axiom "what is one man's food is another man's poison" has been very apropos here.

The importance of allergy is realized when the following facts are recognized. It is estimated that there are about 5 million hay fever patients in the United States, about 3-4 million asthmatics, 3 million have migraine, and some 2 million have allergic skin diseases. The mortality from allergy is very small, but the inconvenience and discomfort, economic loss of time from school or work, the disabling effect in many cases, and the complications, make the allergic diseases a rather important group and deserving of more study.

Some of the more important conditions considered in allergy are asthma, hay fever, vasomotor rhinitis, infantile eczema, neurodermatitis, urticaria, angioneurotic edema, migraine, gastro-intestinal allergy, and lesser ones as idiopathic epilepsy, Henoch's purpura, enuresis, and rheumatic dermatoses. In this paper I shall not discuss the symptoms of each individual condition, but will try to give a general picture of the appearance of the allergic child.

Much has been written on the etiology of the allergic diseases. It is agreed by all that it is important to establish a familial history in these individuals.

By the tenth year of life, atopic symptoms have appeared in 89% of atopic offspring under a bilateral hereditary influence, in 35% of those subject to a unilateral influence, and in only 20% of those with a negative immediate family history. Asthma and related conditions are transmitted as a Mendelian dominant characteristic. The greater the heredity the earlier are symptoms manifested, and the earlier the

child is sensitive the greater the tendency to multiple sensitizations. The allergic tendency and not the disease is inherited. The child must become sensitized to a substance. This substance is called excitant, allergen, or atopen, and is usually protein in nature, but not necessarily so. The reaction depends on the individual's tolerance, and such tolerance depends on the individual's general health, and also on secondary or precipitating factors such as cold, heat, wind, or sudden changes in weather.

Some of the signs and symptoms suggestive of an allergic disturbance are early vomiting such as may occur with pylorospasm, bowel spasm or colic, "cradle cap" and craniotabes about the fourth month of life especially in infants who have had adequate amounts of cod liver oil. Later there may appear frequent head colds without fever, itching, sneezing, coughing, wheezing, hoarseness, croup, eczema, hives, excessive constipation, or loose stools with mucus. Cohen and Rudolph have given a very fine description of allergy of the upper respiratory tract in children. Frequent colds and chronic coughs are very significant. The child awakens in the morning with a stuffed nose, and may sneeze considerably. He may have a paroxysmal or wheezy cough during the night or on rising. With a congested itchy nose, sniffling, hacking, scraping dry cough, mouth breathing, snoring, and a thin mucoid nasal discharge, he presents a picture never to be forgotten.

Nose rubbing has been termed by Bowen "the allergic salute". The child with nasal allergy dries his nose and promotes aeration by passing the palm of his hand vertically along the tip of the nose while pressing inward toward the face.

Many of these symptoms have a tendency to clear some after the child has been outdoors for a while. He is always tired, and has no pep at all. Headaches, either frontal or occipital, irritability, nervousness, anorexia, impaired hearing, poor school work, and an antisocial attitude all go to complete this picture.

His nasal mucous membranes are pale and edematous in contrast to the red, hyperemic swollen membranes in infection. The same appearance may occur in the mucous membrane linings of the sinuses. The discharge is always thin and mucoid unless super-

imposed by infection. A nasal smear will reveal many eosinophiles, as will also a blood smear.

There is excessive lymphoid tissue in the pharynx. Polypoid degeneration is almost invariably due to allergy. Regrowth of the tonsils is distinctive, especially if recurring a short time after a recent tonsillectomy and adenoidectomy. Duke stresses the deformity of the chest and face following a chronic allergy. In chronic asthma there is a gross deformity of the thorax consisting of an increased dorsal kyphosis with a pigeon breast. In perennial nasal allergy, there is paranasal depression, and depression below the zygomatic arch which gives undue prominence to the cheek bones. This is due to inadequate growth of the ethmoid cells and antrums. It is differentiated from the adenoid facies in that there is no pinched appearance, the front teeth are not protruded, and the lower jaw is normally developed. If the condition persists through the growing period into adult life, it becomes fixed and permanent. If treated early they regain good mental and physical health, and show a change in their physiognomy. M.B. and S. Cohen emphasize the relationship between growth and activity and allergy. No child can be considered healthy who fails to achieve suitable and regular increments in height, weight, and maturity. Allergy may disturb the growth pattern. His weight is most easily affected, next his stature, and most resistant is his maturity.

The treatment of the allergic child has made rapid and definite progress in recent years.

One rather difficult problem has been the fact that the allergic child is never static; his allergy pattern changes continuously, he becomes acclimated to some allergens and sensitized to others.

The prophylaxis of allergy as emphasized by Bret Ratner may help to postpone or even prevent the onset of many allergic conditions. The care of allergic children begins in utero. In view of the frequency of abatement of clinically allergic symptoms during pregnancy, many mothers should be warned to abstain from foods they know they were previously sensitive to, since the cravings of the pregnant mother, and her excessive indulgence in certain foods account for some cases of food sensitivity in infancy. The pregnant mother may passively sensitize her infant to allergens.

Allergic babes should be immunized early against pertussis, diphtheria, tetanus, and smallpox. This reduces the need of subsequent horse serums, and the care of an unusually severe illness.

A good history is half the task in the proper care of an allergic youngster, and many pertinent facts

may be established before attempting any skin testing. Do not force foods to which there is a dislike. In suspected lactalbumin sensitivity, boiled, powdered or evaporated milk is better tolerated. If casein sensitivity exists then milk of all kinds is better omitted, and the use of some soy bean flour mixture is better tolerated.

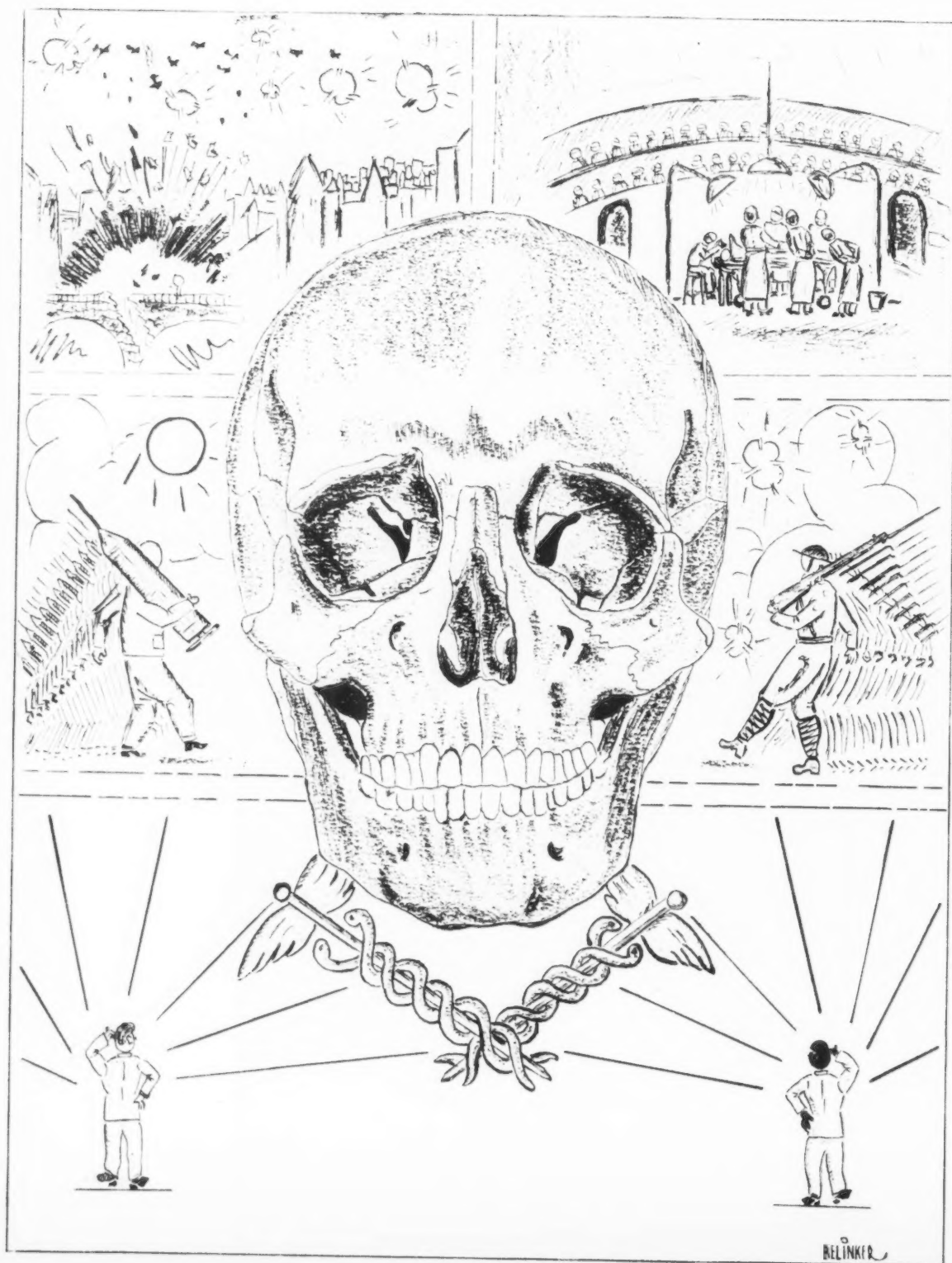
When introducing new food or vitamins, give a small quantity once, and do not repeat for 3 days. Among potentially allergic infants it is better to introduce a single substance and avoid fish oils, mixed cereals, and vegetable soups. The infant of allergic parents should have a room free of feathers, hairs, face powders, sprays, cottonseed and dust.

Skin tests for the determination of reacting antigens can be done either by the scratch or intradermal method. In recent years the intradermal method has grown in popularity. Skin tests may frequently be negative in early infancy and therefore of little value here; however in early and later childhood it is of growing significance as our technique and types of materials improve. Skin tests are of greatest value in pollinosis and asthma, and are of least value in urticaria and gastro-intestinal allergy. The size of a skin reaction is not always an indication of the importance of the test. In very sick infants, or those with lichenified skins, passive transfer tests may be of great value.

In G-I allergy the use of the leucopenic index has been of some help at times. To obtain good results all positive reacting foods should be removed from the child's diet, especially if proven clinically, and an absolute control of the child's environment should be attempted. Elimination diets are important if negative skin tests are obtained. The diet should contain a proper number of calories, sufficient minerals such as calcium and phosphorus, and all the essential vitamins. Omit wheat, eggs, milk, chocolate, tomatoes, and potatoes. Avoid remaining on a severely restricted diet for too long a period of time.

In regard to surgery in allergy Layton wisely said, "enlarged tonsils should be removed from the terminology, not the pharynx." However if definite indications for surgery exist, they should be performed even in the allergic child; however one should postpone a T and A operation until after the pollinating seasons or after an acute phase of an allergic flare up.

Finally we must remember that in treating an eczema, asthma or any other allergic condition, the important thing is to treat the *infant* or *child* with the allergic condition, and not the allergy alone.



The Medical Student Thinks

GEORGE WOLOSHIN

The medical student of today is slowly but surely becoming aware of the fact that he or she forms an integral part of society at large. No longer can we feel that we are burying ourselves for a four-year period during which we accumulate the required knowledge and skill and after which we emerge schooled and efficient, ready to take our places in the progress of civilization. Unless we are continually aware of the developments which come to pass and unless we do our share in directing such forces as govern our lives we shall find, upon our emergence, that in spite of our arduous preparations we are not fitted for those positions that we have been so intensely trained for.

The problems confronting those of us now engaged in the study of medicine are so many that each of us is affected by at least one of them. Some of us may find ourselves confronted with one major worry, others are forced to grapple with many. The problem may be one of financial instability or it may be one that the individual has to face through no fault of his own, namely, that of discrimination against him because of his creed or color. Or if the student is so fortunate as to be totally free of those cares, he has now been saddled with one that well nigh promises to obviate any further efforts in medical school if it is not met with and solved—that problem being conscription.

The chief manifestation that the medical students of today are active, informed, and prepared to act on topics and subjects which affect not only themselves but the general population as well, is the youthful but rapidly growing Association of Medical Students. The association held its fifth annual convention in Boston during the last days of this past Christmas vacation and the results of that convention are indeed heartening. Resolutions were adopted on such topics as peace, financial aid to medical students, against discrimination of students because of color or creed, the Murray McCormick bill and National Health defense. The rest of these resolutions need not be set down here. However it would portray the fact that we medical students are aware of the seriousness of the problems facing us and our democratic way of life.

Many of us are forced to engage in some form of activity other than our studies so as to gain the means with which to continue these studies. Needless to say, the time available to a medical student for things which are not directly related to medicine is extremely scarce. Surely these extra curricular activities do not allow full justice to be done to one's training. Many of us also have been forced to burden ourselves with financial obligations which will carry over for many years after we are practicing physicians. Surely that also is not conducive to the proper state of mind necessary for a medical student. Investigations have shown that the cost of medical study is prohibitive to a great number of boys and girls who are potentially capable physicians. These investigations have also shown that scholarships and governmental aids by such agencies as the N. Y. A. are fewer and on a much smaller scale than that enjoyed by universities and colleges throughout the country. It thus becomes evident that a high barrier confronts the young boy or girl who wishes to pursue the study of medicine. If for no other reason than democracy and equal opportunity this barrier should be lowered, more scholarships should be offered to deserving students, and medical students should receive larger grants from governmental agencies. It is difficult enough for one to study medicine properly without worrying about the possibilities of being forced to discontinue these studies because of lack of funds.

In a democratic country such as ours too often the principles of true democracy are not allowed to filter through all of its intended channels. It is a stated fact that the negro population of the United States does not have its proper proportion of negro physicians. Most medical schools refuse admittance to or restrict the training of negro students. The number of medical schools which will undertake the training of negro students is grossly inadequate. The A. M. S. has taken steps toward arriving at a solution of this certainly unfair situation. We have seen the results of minority discrimination in other countries of the world and the lesson may well be learned that such practices are not in accord with the ideals and principles of government which were intended for us by the founders of our government. At its con-

vention the Association voted to sponsor the education of a Negro medical student with chapter contributions from a nation-wide drive.

The varied and rapid developments in the world may have been merely interesting reading in our daily papers until the full portent of this nation's part in the world conflict was suddenly brought home to us by the introduction and passage of the Burke-Wadsworth bill. Only then did many of us become aware that war and all of its consequences were not so very far away. This fact, more than any other single factor, has served to awaken the medical student and cause him to become aware of the trend of events. For not only are we as individual medical students threatened with the postponement and possible cessation of our studies but the entire nation is threatened with a severe blow to its health. If medical students are not allowed to complete their education and internes not allowed to complete their hospital training—who will care for the health of the people when the present not-completely-adequate roster of physicians has its ranks depleted by the *normal progress* of events? In the last war many hospitals were staffed by such inadequately trained persons as chiropractors. "The health of a nation is its first line of defense"; however, the statement seems to be as often disregarded as it is quoted. The A. M. S. and the I. C. A. have fostered the Murray-McCormick bill which aims to prevent the conscription of medical students and internes into the army until they have completed their training. If we are to justify our training, if we desire to keep the country's health standards at least on their present level, we must expend every effort so that the Murray bill becomes a law. However, we as a relatively small group are alone incapable of accomplishing so great a task. We must cooperate with all and any agencies which we find at our disposal so as to impress upon the population the due necessity of such legislation; we must call attention to the consequences that are inevitable should medical students and internes be forced to discontinue their medical pursuits. At this point it should be emphasized that the A. M. S. has always accepted a responsibility for taking a stand on all pressing world problems of the day. It has tossed aside the mythical notion of the student cloistered in an ivory tower of books. At the last A. M. S. convention, a resolution was passed condemning the involvement of our country in the European debacle. As an essential party for keeping this land at peace, it supported the maintenance of the Johnson and Neutrality Acts. Further, it recog-

nized that the defense of this nation depends upon its national health.

The Murray bill, and the position of the medical student in emergency periods such as these are merely immediate factors which serve to call our attention to the need for a large-scale program of national health defense. Never before have the low standards of health of this country been so vividly brought home to us as at this time. In a recent newspaper article it was stated over forty per cent of the young men called for selective service have been refused entrance into the army because of poor health. These men are supposed to constitute the very flower of American manhood. The Selective Service Act was so designed as to call only those men who are supposed to be at the peak of their physical abilities. Such facts can only mean that we as a nation do not have the proper standards of health. What then would happen if even less medical services were to become available to the nation than it already has?

We are medical students being trained in scientific fields, trained to have a scientific outlook. We have learned to treat conditions from an etiologiical point of view. Then we must all realize that the problems that face us are not individual matters but rather tasks that are common to all of us, situations which can be resolved only by the mass endeavors of all of us. With the Association of Medical Students as a parent body it now remains for each student to do his or her share in forwarding the aims and ideals of this organization.

A.M.S. SPEAKER

On February 27, 1941 The Chicago Medical School chapter of the Association of Medical Students was honored by an address from Dr. Walter C. Alvarez, Director of the Medical Division of the Mayo Clinic. Dr. Alvarez, a distinguished clinician, physiologist and author, one of the leading men in the field of gastro-enterology, gave an interesting and entertaining discussion on "Unusual Abdominal Pains." His excellent presentation of a subject in which he, himself, has done most of the leading work was interspersed with wise and timely recommendations to the doctors of today and tomorrow present at the meeting.

One of the first catalogues to describe a steam sterilizer, put it this way: "It is not only an invaluable auxiliary to the surgery, but is an ornament for the office."

OVARIAN HYPOFUNCTIONS

CHARLES P. KRAATZ, Ph.D.

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We find the concept of fortification of gonadal secretion in the literature of fifty years ago. A physician in France, Brown-Sequard, made an effort to relieve the testicular hypofunction of advancing age by injecting himself with an aqueous extract of stallion testis (probably the ultimate in maleness visible). The marked rejuvenation described by him (but not documented) was later shown to be simple psychotherapy, since aqueous gonadal extracts are inactive.

Thirty-five years later, modern sex-endocrinology began. The crude procedure first described by Zondek and Ascheim in 1926 followed by Smith and Engle, of jamming a whole rat pituitary gland into an immature rat's leg sent the rat mortality in laboratories the world over to a new high as investigators feverishly followed this lead. For this simple act matured the infantile ovary of the rat and thus the mighty "ticker" of the sex-system, the anterior pituitary, was revealed.

In the full fourteen years since this discovery, many sex hormones and their relatives have been isolated and identified; pituitary hormones affecting many organs have been extracted from the gland; pregnancy tests have been discovered and developed; androgenic and estrogenic substances not even imagined by Nature have been synthesized, and the complex relationships of many hormones chasing each other through the circulation struggle slowly toward clarification.

In a field almost as dynamic as the heart of the atom, the picture at any moment has only a transient value. This account is an endeavor to look at the endocrine aspects of two types of ovarian hypofunction as they stand today.

STERILITY

In addition to an essentially normal anatomy, these factors are essential to fertility: anterior pituitary gonadotropic hormones, estrogen, mature ova and progesterone. The sole normal stimulus to ovarian activity is hormones released by the anterior lobe of the pituitary gland. The competent ovary responds to this stimulation by emitting estrogens, ova and progesterone in the proper quantities and order for reproduction.

The estrogens (follicular hormones) and progesterone (corpus luteum hormone) in turn act on the

entire genital tract, notably the uterine endometrium, to prepare it for and to nurture the pregnancy.

Since the proper physiological combination of pituitary hormones and a reactive ovary invariably produces ova and the essential ovarian hormones, endocrine sterility may be classified into two groups:

A. Failure of ovary to react.

B. Deficient pituitary secretion.

A. When the fault lies with the ovary, sufficient ovarian hormones may be produced for apparently normal cycles. The production of follicular-stimulating hormone by the pituitary may be normal or super-normal since the estrogen which ordinarily controls its liberation is slightly deficient. The ovary is simply incapable of responding to an increased gonadotropic stimulus with full fruition. This partially refractory condition may be compared to the totally refractory condition of the post-menopausal ovary. In both cases the ovary is incapable of controlling the production of follicular-stimulating hormone and unable to react to and utilize the full complement of pituitary hormones released. The concentration rises in the blood and the gonadotropic hormones are excreted in the urine. Naturally, larger quantities are eliminated when the ovaries are absent or completely inactive. The less the activity of the ovary, the greater the quantity of gonadotropic substance excreted.

Since normal women excrete appreciable quantities of gonadotropic hormone on only one day of the cycle (probably ovulation), this situation provides an endocrine test for refractory condition of the ovary—the continuous excretion of gonadotropic hormone in even small quantities in the urine. In performing this test, the urine is somewhat concentrated by crude methods and assayed for gonadotropic activity in mice or rats by the Ascheim-Zondek technique.

As yet, no treatment has been devised to activate a refractory ovary and this type of sterility is incurable. When an activator is found, the menopause will disappear.

B. The second and more common type of endocrine sterility involves a normal ovary but a pituitary secretion that is deficient, qualitatively or quantitatively. These cases may be distinguished from the refractory-ovary type by the complete absence of gonadotropic substances in the urine.

The elaboration of estrogen and the maturation of the ovum proceed hand-in-hand and are apparently both controlled by one hormone, the follicular-stimulating hormone of the anterior pituitary. Thus, as a Graafian follicle is being brought to ripeness, sufficient estrogen is being sent concomitantly via the blood to act on the endometrium and proliferate it in readiness for the action of progesterone. If full ripeness is achieved, ovulation occurs through the normal hormonal mechanism. Then, under the stimulation of luteinizing hormone as well as follicular-stimulating hormone from the pituitary, a corpus luteum producing both estrogen and progesterone develops.

The proliferative endometrium of estrogen action is then transformed by the combination of estrogen and progesterone into a secretory or progestational endometrium suitable for the implantation of the developing egg.

If the follicle is not brought to ripeness by the pituitary hormone, ovulation does not occur, a corpus luteum is not formed, and no progesterone is produced to transform the endometrium.

The uterine endometrium is therefore used as an index of ovulation and an indicator of corpus luteum function. By means of a suction curette, a biopsy specimen of endometrium is taken late in the cycle. The presence of secretory areas is considered proof of ovulation and the magnitude of secretory transformation is a measure of the endocrine activity of the corpus luteum. A purely proliferative endometrium after the mid-cycle indicates failure of ovulation.

Another test which likewise determines not only the occurrence of ovulation but the degree of luteal endocrine activity is chemical—the gravimetric determination of pregnanediol glucuronide in the urine. It has been found that progesterone, in the process of acting on the endometrium, is converted quantitatively into an inactive substance, pregnanediol. Conjugation of pregnanediol with glucuronic acid occurs in the liver and the resulting pregnanediol glucuronide is excreted in the urine. This substance is detected in the urine only in the period between ovulation and menstruation and in large quantities during pregnancy. Its presence in pre-menstrual urine is fairly definite proof of ovulation. According to standards advocated by Venning, the excretion of a total of 40-50 mg. of pregnanediol glucuronide during the last half of a cycle indicates normal function of the corpus luteum.

The failure of ovulation appears mainly to be the result of insufficient stimulation of the ovary by follicular-stimulating hormone during the first half

of the cycle. Patently, this is sterility. Subnormal endocrine activity of the corpus luteum may result in sterility from failure to implant in an unprepared endometrium or from habitual abortion from an unsustained endometrium. The deficiency in these cases may be an inadequate amount of luteinizing hormone or possibly both gonadotropic hormones. Habitual abortion has been treated with some success by chronic injections of progesterone to supplement the deficient corpus luteum secretion. The principal present therapy of these conditions is stimulation of the ovary by the administration of gonadotropic hormones.

The endocrine interrelationships are complex and in many cases the mechanisms of successful therapy are not clear. Stimulation of the ovary during the follicular phase of the cycle may initiate a chain of events which will remedy deficient luteal activity. The ovary is caused to increase its production of estrogens; estrogens acting on the anterior pituitary cause an increased production of luteinizing hormone; the luteinizing hormone in increased quantities urges the corpus luteum to greater activity.

For many years, sterility was treated empirically by the administration of small quantities of thyroid substance, particularly in women with a depressed metabolic rate. Whether the thyroid merely remedies a metabolic deficiency or whether it definitely stimulates the ovary is unanswered, but favorable results have been reported.

Following the discovery of a substance in human urine of pregnancy which would mature a rodent ovary and ovulate an oestrous rabbit, the active principle was given a thorough clinical trial in humans. The hormone in pregnancy urine produced by the placenta is strongly luteinizing in its action. After an initial flurry of favorable reports, the unhappy conclusion grew that the reaction of the human ovary to this substance was different from that of the rat and rabbit ovary. It seems now that pregnancy urine extracts hyalinize the human follicle and prevent ovulation rather than stimulate growth and ovulation. The possibility that they enhance corpus luteum function if administered after ovulation has not been exhausted. Since the hormone has an abundant source, commercial preparations are many and comparatively inexpensive. It has been demonstrated that a high percentage of these, however, are far below their labeled potency as tested on rats by the time they reach the physician.

Ideally it would seem that the substance used to stimulate the ovary should be obtained from the

anterior pituitary. Such extracts are very effective in laboratory animals and a few commercial preparations are available. However, their high protein content is a caution signal and the rate of deterioration of the extracts even in the refrigerator appears to be rapid.

Another gonadotropic substance, which has received scant clinical trial, is found in post-menopausal urine. This product of the human anterior pituitary is a potent follicle-stimulator in rodents and on theoretical grounds would seem to be the ideal material for treating underactive human ovaries.

A few years ago, a potent gonad-stimulator was found in the serum of pregnant mares. This substance, absent from the urine, is found in a high concentration in mare's blood during the first trimester of pregnancy, practically disappearing thereafter. Its source has not been established.

Davis and Koff in 1938 reported the induction of ovulation in normal human subjects at any stage in the menstrual cycle by a single intravenous injection of pregnant mare serum hormone. While this conclusion, based on judgment of the age of corpora lutea, has been questioned by subsequent workers, the hormone has been shown to have a definite stimulating action on the responsive human ovary. Today it threatens to replace all other gonadotropic therapy in women.

The rationale of use of pregnant mare serum hormone in the human is the application of a gentle constant stimulation to the ovary during the follicular phase of the cycle. In this way no sudden hormonal imbalances are set up, while the action of the subject's own pituitary is augmented sufficiently to bring about a normal sequence of events in the ovary and consequently in the uterus.

Several commercial preparations are available which have been highly purified and which contain a very low percentage of nitrogen. Reactions have been rare. Starting during menstruation, small doses of pregnant mare serum hormone are injected intramuscularly every day or two until the mid-cycle. This course of treatment is repeated in successive cycles. Some workers have suggested that this procedure be climaxed by a large intravenous injection to provide the strongest possible stimulus to ovulation and possibly facilitate corpus luteum function.

Clinical reports on the use of this new hormone are unanimous on its effectiveness in female sterility from pituitary hypofunction and most investigators cite figures of 40-60% of successful therapy.

The unrealized goals of gonadotropic study are the isolation of pure crystalline compounds and the dis-

covery of substances that are active when given by mouth, since all gonadotropic substances available today are impure and are destroyed in the gastrointestinal tract.

MENOPAUSE.

The menopause is characterized by the development of a totally refractory condition of the ovary. With the cessation of endocrine activity in the ovary, the reproductive tract deteriorates and the concentration of follicular-stimulating hormone in the blood and urine rises. Theorists differ as to which particular effect of the depression of ovarian activity is responsible for the symptoms of the menopause: excess of pituitary hormone, lack of estrogens or degeneration of reproductive tract with psychic repercussions.

Sex hormones, both male and female, have been given an extensive trial in the relief of this syndrome.

Male hormones or androgens depress the production of follicular-stimulating hormone as readily in the female as they do in the male. Testosterone exerts a slight stimulating action on the genital tract without inducing bleeding and may be a tonic to the cerebrum. Unpleasant masculinizing effects have not been reported as yet.

Estrogens are administered to replace the normal ovarian secretion. Estradiol, estrone or estriol inhibit pituitary secretion, maintain the genital tract (bleeding may necessitate rests), and probably exert a beneficial mental effect.

The natural sex hormones are available in crystalline form. These potent substances are generally injected in oil for painless administration and slow absorption. Some promising experimental work has been reported on the implantation of pellets of the esters for long gradual action. The estrogens have been found to be effective by mouth, though inactivation by the liver requires effective doses to be massive.

A new synthetic substance, stilbestrol, has been found to exert all the effects of the natural estrogens in humans, and is effective when given by mouth in relatively small doses. Some cases of gastric upset have been reported, but control of this is being sought.

The apprehensions of some workers as to carcinogenic effects of chronic estrogen therapy have not yet been confirmed.

The use of gonadotropic substances in sterility is frankly experimental, but they are the only remedies as yet in sight. Sex hormone therapy in hypogonadal conditions rests on a more sound basis than previously but is still far from standardization.

A Sophomore's Perspective

ARTHUR HOROWITZ

Since last semester's issue of "The Quarterly" contained an article on "A Freshman's Perspective," it would be in keeping with this order to present some appropriate remarks relative to a sophomore's lines of thought. There are various subjects pertaining both to the field of medicine and to other matters that could bear elaboration. Two of these are medical education and a medical student's life.

On the subject of medical education, it may be an accepted truth that the prime purpose of a medical school is to turn out doctors—the best doctors that it can possibly produce. Every teacher in the school should be imbued with a desire to meet the qualifications that this premise demands. The imparting of accumulated knowledge, clinical experience and acquired skill is, true enough, a difficult task, but, a teacher who thinks that some of his students won't make good doctors in spite of his efforts or that he is wasting his time in teaching them, is not being honest to his position. Many students and academicians have upheld the view that such subjective intolerance will detract, both psychologically and pedagogically, from a purely professorial attitude.

Thoughts such as these have run through many a medical student's mind since the beginning of the modern scientific approach to medicine. Surely a medical student deserves all the encouragement, hope, knowledge and confidence that his teachers can instill into him. It should be considered in passing that the years and energy and incumbent expenses that must be coped with successfully in preparing for the study of medicine are a great enough impediment to those not sincerely interested in this field. These facts alone stand greatly in favor of obviating the tendency of some pedagogues to consider themselves masters of men's destinies. Rather should they do all in their power to help the students along, because the greater the physician a student becomes, the greater the reward for the teacher, who basks in the reflected warmth of his student's glory.

It is because of this principle of the complete giving of the teacher to his pupil and a spirit of socratic companionship growing up between the two that the purpose or usefulness of surprise quizzes

and the deliberate confusing of students are so open to question and so often the basis for disillusionment.

Years ago, the encouraging of a so-called "competitive spirit" could be understood and even highly commended. However, with the advent of the modern scientific era, when cooperation of all men of science throughout the world led to the greatest outburst of human improvement, this principle seems particularly outmoded. The practice of medicine is not a single individualized problem anymore. Doctors are cooperating to greater and greater extents as time passes. The "group practice" movement is growing, as are other methods of dealing with the sick by pooling a vast amount of general knowledge and ability. In fact, not only medicine, but the entire life of the civilized world seems today to be dependent upon a little less competition and a little more cooperation among the various peoples. Back to our original theme then—why are medical school standards based on the medieval and antiquated principles of competition?



Medical students have been rebelling against such things for a long time. To the student, the ancient Greek maxim of "moderation in all things" is an ideal he is always striving to attain—but his normal school routine hardly gives him time for the exercise, theatres, dancing and forums he feels he needs to maintain his physical, social and cultural background. It certainly would appear to be more desirable for the medical student to lead a more balanced life than he leads at present. To help round out that life, marriage and an active interest in national affairs have been advocated by many.

Much can be said both in favor of and against marriage for a medical student. Many surveys have been carried out and their conclusions tend to support the view for marriage. A married student leads a more normal physiological and psychological life and is consequently able to do better work.

In discussing an interest in national affairs, we must bear in mind that such events will affect the medical student just as surely as he will some day leave the quiet cloisters of his school for the world beyond. That is why the modern medical student has banded together with his colleagues in an Association of Medical Students and that is why he has become politically interested in new bills like the Murray Bill.

Before leaving this subject of an interest in national affairs, it may be very interesting to look ahead with the hope of gaining a glimpse of the more uncertain future. According to generally accepted statistics, about one-third of the nation's population is poorly housed and poorly fed. These people cannot afford the services of a private doctor and must go to free clinics for their medical care. The doctors also give their time to these clinics and treat these people free of charge. This appears to be unfair to the doctor, who is spending time away from his private patients and personal life. And certainly the clinic patients would be better off if they were in a position to have their personal physician. It is for this reason that many feel that the clinic is in the main a stop-gap and would quickly vanish if the lower third of our population would be elevated to a higher economic level. It would be to our benefit, as future practicing physicians, to raise the status of this group. Though there is an underlying selfish motive in this reasoning, the more important humanitarian motive is also quite obvious.

A good critic has stated that "this article deals in 2,000 words what 2,000 books have dwelt on and not settled for 2,000 years." By way of reply, it

may be said that this article has not purported itself to be the settlement of any of the issues discussed, but rather to present a general concept of gross social pathology. It has not been its intent to treat the subject systematically, but rather to mention as many and as diversified topics as possible and in that way to develop a bird's-eye view of the panorama as a medical student beholds it.

There you have it—the conditioned cerebral sparkings of a sophomore. He would be very pleased to learn what some of his colleagues are thinking about these days.

FAIR EXCHANGE

We wish to extend a hearty welcome to Miss Chrine Krinn, our new clinical laboratory technician.

Miss Krinn's professional experience includes nurses' and technicians' training at St. Anthony's Hospital; she was surgical supervisor of the children's ward for two and a half years. She was also assistant supervisor of nurses at St. Joseph's Hospital in Elgin, Ill., and she studied Rural and Public Health Nursing Service in Cook County Hospital; finally, she has been laboratory technician at St. Anthony's Hospital for the last four years.

Those of us who have met her already are very willing to herald her friendliness as well as her skill as a technician. We hope that Miss Krinn will enjoy her work and will be with us for a long time to come.

MISS WOOLEY

We regret we announce the absence of Miss Helen Wooley from our clinic halls. Miss Wooley left us for a position as technician in the St. Anthony's Hospital laboratory. Many of us who have worked with her miss a good friend and a swell person, but we feel sure that wherever she will go she will gain friends for herself and for us as well. Her comradery and sincerity of purpose has provided the basis for friendly understanding on the part of the clinic students.

Before leaving we extracted from her a promise that she attend the Junior Promenade; we were glad to see that promise kept. We recognize regretfully, as our own, the loss of Helen Wooley as a good teacher and a fine friend.

Thomas Addison, of Addison's Disease, while studying at Edinburgh (1815) wrote his lecture notes in Latin. Modern students seem to prefer Greek.

ORAL INFECTION AND SYSTEMIC DISEASE

RAPHAEL M. ADELMAN, D.D.S., M.S.D.

A focus of infection has been defined as a circumscribed area of tissue infected with pathogenic microorganisms; and secondary foci are the direct result of infection from other foci through contiguous tissues, or at a distance, through the blood stream or lymph channels. The secondary picture may be painful and debilitating causing inhibition of function of the involved tissues in the earlier stages, while in the later stages the life of the part may be threatened.

The principle of focal infection began as a hypothesis, and then with the vast accumulation of laboratory and clinical research, it advanced to a principle to be used in treatment and control of disease. In the dental field, the discovery and widespread use of x-ray was a large factor in the evolution of the focal infection principle. The achievements of G. V. Black, William Hunter, W. D. Miller and others inspired many workers to realize that this theory would broaden and emphasize the importance of this fact in health conservation.

The belief that low grade infections of the mouth and teeth may cause chronic diseases in other parts of the body is not at all new, since over 2000 years ago, a physician suggested dental extractions as a cure for systemic ailment. Professor A. T. Almstead of the University of Chicago interpreted a tablet made at approximately 630 B.C., "The pains in his sides and his feet come from his teeth, and they must be extracted from his face."

W. D. Miller, in 1891 listed conditions under 30 heads, which, if traced to their original source would be found to be a result of oral infection. Most of the diseases were of the mouth itself, but the other diseases pertaining to other parts of the body were, "pyemia, septicemia, meningitis, encephalitis, brain abscess, disturbances of the alimentary tract, diseases of the lung, croupous pneumonia, lymphadenitis, infectious angina, and maxillary sinus disease."

Pathological oral conditions which have been shown to be a possible source of focal infection are:

1. Caries (dental decay)
2. Living degenerating pulps
3. Dental cysts
4. Impacted or unerupted teeth
5. Periapical infection about pulpless teeth or teeth with non-vital pulps

6. Gingivitis, Vincent's angina, or any stomatitis
7. Pyorrhea
8. Infected lingual tonsils
9. Mouth filth due to poor dental work, tartar and debris
10. Residual infection after extractions

Following an inflammation of the pulp, death of the pulp may ensue with a resulting "alveolar abscess" which may be classed as an infectious disease of local character. It is of varying intensity, often affecting the system in general, and may cause death through pyemia or septicemia. Whenever microorganisms are accumulated in large masses, the possibility of their causing metastatic diseases in areas of diminished resistance cannot be excluded without consideration. Many cases of chronic pyemia have been eliminated by the removal or proper treatment of a diseased tooth. General blood poisonings and septicemia have resulted from an accumulation of infectious material about the roots of a diseased tooth. However, the more serious complications of decayed teeth are osteitis, and osteomyelitis. Following a pericementitis there is an inflammation of bone and bone marrow, osteitis and myelitis. Death has resulted from spread of infection through the floor of the mouth and retrotonsillar tissue to cause Ludwig's angina with the infection finally passing into the mediastinum producing a pleuritis, or a pericarditis, with purulent exudations.

Many cases of dental fistulae have been found opening on the neck, shoulder, arm or breast which remained despite all treatment until the mouth was thoroughly examined. Death due to a septicemia may occur in a few hours as a result of the accumulation of purulent material about the apex of a diseased tooth.

More common than septicemia is pyemia, resulting from diseased mouth and teeth. Chronic pyemia presents itself in the form of abscesses of varying intensity occurring in different parts of the body, healing spontaneously at one point, only to break out again at some other more or less remote area. The focus of infection maintained by the diseased tooth gives up its virus to the blood or lymph. The virus circulates and establishes itself at any point, where, at the time, there may be a diminished vitality. In all

cases of chronic pyemia a thorough inspection of the oral cavity should be made by a dentist or a physician educated in oral pathology.

It has been shown that meningitis, encephalitis, cavernous sinus thrombosis, and brain abscesses have occurred as a direct result of maxillary teeth infections. The path of organisms of this maxillary infection may be through the maxillary sinus, nasal cavity, ethmoid bone, pterygoid fossa and foramina at the base of the skull, or through the spheno-maxillary fissure. Infections of the mandible have been found to pass through the fascial planes into the temporal region and come to lie on the temporal bone, finally resulting in meningitis.

The causal relation of a diseased condition of the teeth to infiltration of the surrounding tissue and chronic swelling of the lymphatic glands in the region of the mandible and neck was established by Odenthal, who found glandular swellings in 29% of all sufferers.

Angina Ludovici, or Ludwig's Angina presents itself as a severe, septic infection, which involves the floor of the mouth, the submaxillary regions, and the upper part of the neck and is characterized by a rapidly spreading edema. This disease is caused by a virulent streptococcus which may come from an infected tooth or a primary lesion of the mouth. By means of the lymph channels the bacteria reach the submaxillary lymph glands which become enlarged or destroyed.

The infection continues along the fascial planes. The entire floor of the mouth becomes involved. Edema swells the glottis; dyspnea occurs until finally a tracheotomy must be performed to permit the patient to breathe.

Because of the peculiar structure of one of the tooth tissues, the cementum, chronic infections about the teeth present a problem in local pathology entirely different from any other. Cementum is a passive tissue dependent upon the periodontal membrane for its vitality, since it has no blood supply of its own. It dies when denuded and cannot be exfoliated. Therefore, it remains to act as a continuous irritant to the adjacent tissues maintaining a chronicity of the infection about the teeth.

From roentgenographic and microscopic studies of tissues involved in chronic mouth infections it is generally believed that a chronic suppurating focus may lead to any one of a considerable group of diseases, most of which are insidious in their development and extremely chronic in their progress. Therefore, it is demanded that the chronic focus be re-

moved. It is not possible to express in figures the relationship existing between mouth foci and systemic effects, because the latter may be due to other causes which must be eliminated before one may safely say that the disturbance is the result of an oral lesion. To give a partial review of diseases associated with oral symptoms and lesions, we present the following brief summary from Mead:

A. Stomatitis and General Systemic Disturbances.

- (1) Gout may cause a looseness of the teeth and inflammation of the periodontal tissues.
- (2) Uremia also predisposes to loosening of teeth, edema of the uvula, soft palate, and a catarrhal inflammation of the pharynx.
- (3) Diabetes Mellitus will cause a typical acetone odor of the breath and a gingivitis.
- (4) Tabes Dorsalis shows absorption of the alveolar ridge, perforating ulcers, and loosening of the teeth, with an anesthesia of the mucous membrane with little or no pain.

B. Stomatitis and Specific Infectious Diseases.

- (1) Gonorrhea buccalis is common in children. The infection occurs at birth in the mouth with lesions developing within two weeks. This disease may occur in adults as a result of sexual perversion. The first symptoms are usually a dryness of the mouth followed by salivation and purulent secretion. The soft tissues of the mouth affected are the gingival margins of anterior teeth, the lips, the anterior two-thirds of the tongue, the pillars of the fauces, and the soft palate. The lesion appears as a white or yellow-white area surrounded by a red zone of inflammation.
- (2) Pneumonia lesions in the mouth may take on the appearance of aphae since white plaques are formed due to coalescence of fibrous exudates on the mucous membranes.

C. Stomatitis in Acute Constitutional Disorders.

- (1) Scarlet Fever gives a typical symptom of "strawberry tongue". The central portion of the tongue is furred. The throat symptoms are a redness and swelling of the pillars, soft palate, and tonsils.

(Continued on page 37)



A Medical Student's

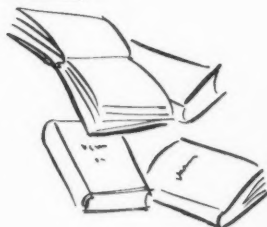
ARTHUR L.

Ageless and immutable are the perennial complaints of freshmen in every educational institution. The ivy-covered tradition of these woes finds its highest peak in the body of freshmen medical students in particular. Every year these chronic peculiarities peal forth with new vigor — and with it the consistent futile search to find the heartfelt sympathy of more experienced colleagues. The sophomores continue to grin good-naturedly; the juniors, who still wonder how they did it, add a non-committal "Don't Worry", and the sardonic seniors provide an unsympathetic "We know, we know".

And so on it goes, year in and year out — the same endless hours of dissecting, feverish study and cramming, meeting the challenge of every week with the Damoclian sword of next week awaiting. Still it remains a saga in its essence; the epochal struggles of each freshman, made common by the same fight by his partner. It revives the memories of breathless competition, hunting out and "spotting" questions, finishing a two hour exam in one, when you should have taken three; the photophobia of the men after a session of microscope work, and a series of similar thoughts. Yet in its irresistible force it goes on — new men coming in to fill the demand, and others going out to make way for them. A little speculation easily shakes us from the smugness that experience has given us.

How difficult it is to repress those first year recollections: the weary hour upon hour sessions in Anatomy Lab, when you found the ciliary ganglion — how weariness changed to excitement; the change of scientific curiosity to boredom in Histology; and thence to Embryology, Physiology, and Biochemistry; smudged faces, hands sticky with shellac, fingers stained yellow with nitric acid, and tears precipitated by ammonia fumes.

That's the freshman year — and next year they will come again, and complain and moan again, as unchangeable as time itself; and still they find no sympathy — only a faltering encouragement. But the challenge is there, and they arise to meet it, and the manner of meeting it proves moral worth and intellectual sufficiency worthy of the profession.



Student's Day

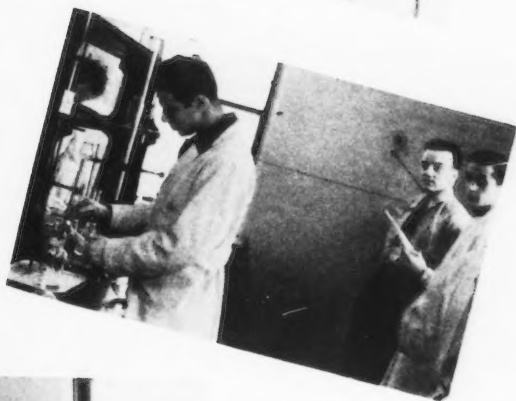
HU LOEBEL



Again we are led into a swift survey—the search for the nucleus of each life is begun again; here we have men from almost every walk of life, subjecting themselves to the rigors of medical education. Every one among them is different—a personality unto himself alone akin, but there is one thing alone that unites them all by a common bond: the desire to become a doctor.

The most interesting part about it, however, is the reasons for their being here. Some of them want to be doctors because their fathers before them were doctors; that's commendable and in keeping with Hippocratic precepts. Some think that they'll make a great deal of money; both the idea and the logic is questionable. Some have come as an answer to an intellectual challenge—and a question of sublimation is at once aroused. Others have come to satisfy an ideal. To achieve it, they are confronted with problems of practicability. More often than not this group is the victim of precursing sentimentalism, but a good majority perseveres. Further questioning elicits more or less realistically a series of bizarre replies. Nevertheless, were practicing doctors to do the answering, you would undoubtedly get a series of similar replies—, but it would be safe to say that their conclusions are now all the same. The idealism has been replaced by ethics, and the sentimentality by subordinating dignity and reserve. The enthusiastic are more austere, and the intellectuals might be deep in research. But condense, if you will, the embryonic ideas and ideals, and the more mature philosophies, and the confusion tends to resolve itself into a strongly convincing answer. For a good majority of the men it is proposed that there is a desire for a life wherein work is adventure and not a bore, and each day has its own unique reward. It is a combination of excitement and interest in humans, of companionship of many men of the same profession; and where life is lifted into the category of an intellectual and spiritual romance, and a midnight call, though disrupting, is proof that a place in the scheme of life has been found.

They can be tried for romanticism and be easily convicted, but it is not a weakness to take the task for all that it is worth, and yet maintain its less tenable inferences as well as its practical essentials.



Social Aspects of Medical Students

E. FLICK

The first issue of the Quarterly carried a report and discussion of the 1940 sociological survey conducted among a large group of medical students in Chicago. There seemed to be sufficient interest aroused to merit reproducing the results of a previous survey held in 1939. The technic of selecting the questions, collecting data, and clinic discussions afterwards remain the same. However, the emphasis is somewhat differently applied in the two surveys.

The questionnaire below was taken in toto from the paper "Study of Attitudes, Personality, Social Fitness, Adaptability, Character, and Motivations of Medical Students" by Mr. Norman R. Fielder and appeared in the Journal of the American Medical Association for November 25, 1939. For permission to reproduce this material we are indebted to the author and to the editors of the Journal.

Questionnaire

- Q.—Age. A.—26.
1. Q.—What are your real reasons for entering the profession for which you are studying? Please number them 1 for most important and 2 for second, and so on. A.—Easy work, social position, 4.2%; chances for marriage, taste, 30%; aptitude, 8.8%; opportunity for service, 49%; money, 3.8%; parental pressure, advice of others, 4.2%.
 2. Q.—Do you work outside? A.—65% yes, 35% no. Q.—Do you feel that outside work in moderate amount is a handicap? A.—60% yes, 40% no.
 3. Q.—Outside of studies and sleep, what are principle activities? Please rank them in order of time spent, 1 for first, 2 for second, and so on. A.—Reading, 40%; bull sessions, 6%; drinking, opposite sex, 2%; movies, 8%; outside work, 44%.
 4. Q.—Do you spend time on a hobby? A.—46% do, 54% do not. Q.—If so, what? A.—Photography first, stamp collecting second, books third.
 5. Q.—What is your favorite magazine? A.—First choice, "Reader's Digest"; second choice, "Life Magazine."
 6. Q.—Do you ever stay up the major part of the night to study for an exam? A.—52% do, 48% do not.
 7. Q.—Do you follow a regular study schedule? A.—51% yes, 49% no.
 8. Q.—Do you ever carry "crib notes" to exams? A.—75% do not, 25% do.
 9. Q.—Do you condemn those who do? A.—55% yes, 45% no.
 10. Q.—Do you accept information from your neighbors during an exam? A.—30% do, 70% do not.
 11. Q.—Do you give such information? A.—56% yes, 44% no.
 12. Q.—Do you think the honor system would work in your class? A.—21% yes, 79% no.
 13. Q.—Do you always attend classes when attendance is not taken? A.—42% do not, 58% do.
 14. Q.—Of your instructors the past term, how many would you rate in each group? A.—(In order of number—Fair first, poor second, good third, excellent fourth.)
 15. Q.—Please number in order of importance, the characteristics you believe an ideal instructor in your professional school should have? A.—Equally rated as first were technical knowledge, pleasing personality, clarity of expression; clear speaking second, general information third, lucid thinking fourth and research ability fifth.
 16. Q.—Do you feel that the students in your class are overworked? A.—60% yes, 40% no.
 17. Q.—Should an instructor take his personal opinion of a student's suitability to a profession into consideration when passing him or failing him? A.—70% no, 30% yes.
 18. Q.—If it were legal, would you perform abortions on unmarried women? A.—68% yes, 32% no.
 19. Q.—Would you tell "white lies" to patients? A.—98% yes, 2% no.
 20. Q.—Would you do plastic surgery for beauty's sake? A.—64% yes, 36% no.
 21. Q.—Do you believe in "mercy deaths" in incurable disease? A.—22% yes, 78% no.
 22. Q.—Has your professional school made you more aware of human need? A.—74% yes, 26% no.

23. Q.—Do you believe in government control of production? A.—84% no, 16% yes.
24. Q.—Are you prejudiced against Jews? A.—22% yes, 78% no. Q.—Are you prejudiced against Gentiles? A.—94% no, 6% yes.
25. Q.—Would you date a person of a different race? A.—80% yes, 20% no. Q.—Marry one? A.—95% no, 5% yes. Q.—Room with one? A.—64% yes, 36% no.
26. Q.—Do you go out of your way to help others? A.—21% no, 79% yes.
27. Q.—Do you favor women smoking? A.—10% no, 90% yes. Q.—Do you prefer modern women to the "old-fashioned" girl? A.—88% yes, 12% no.
28. Q.—How would you rate nurses morally compared to other groups of women? A.—12% lower, 76% equal, 12% higher.
29. Q.—How do you rate male professional students morally to other groups of men? A.—9% lower, 82% equal, 9% higher.
30. Q.—Do you believe that women are the mental equals of men? A.—93% yes, 7% no.
31. Q.—Do you use alcoholic beverages frequently? A.—72% do, 28% do not. Q.—Do you condemn those who do? A.—92% no, 8% yes.
32. Q.—As companions, do you prefer those who drink to those who do not? A.—76% yes, 24% no.
33. Q.—Do you ever indulge in extra marital sexual intercourse? A.—16% do, 84% do not.
34. Q.—Do you condemn engaged couples who do? A.—58% no, 42% yes. Q.—Do you condemn others who do? A.—54% yes, 46% no.
35. Q.—Have you been in a house of prostitution more than once? A.—7% yes, 83% no.
36. Q.—Have you ever had a venereal disease? A.—Three reported yes.
37. Q.—Do you attend church regularly? A.—15% yes, 85% no. Q.—Would you be as well off if you did not? A.—54% no, 46% yes.
38. Q.—Could you do as well without church? A.—86% think they could, 14% no. Q.—Do you believe in God? A.—98% yes, 1.5% no.
39. Q.—Are you tolerant of those who do not? A.—95% yes, 5% no.
40. Q.—While attending professional school, has your attitude substantially changed toward: God? A.—Yes. Q.—Study? A.—Yes. Q.—Sex? A.—Yes. Q.—Your profession? A.—Yes. Q.—Church? A.—Yes. Q.—The race problem? A.—Yes.

41. Q.—What could an ideal church do for you? A.—Give faith, inspiration, belief in mankind.
42. Q.—In a few words, tell what is your greatest problem? A.—Financial first, problem of adjustment to new ideals fourth, getting through school fifth, family sixth, setting up practice seventh.

In order to get at the kernel of all this variegated data, we might, perhaps, attempt a solution to this question: What are the prime factors that contribute toward making the successful doctor? Technical knowledge? Personality? Character? If the data from No. 15 is any criterion, then we must admit there is apparently no substitute for excellence on the technical side. However, "effective personality" and character—obscure though their definition—also bulk very large.

The natural corollary of our first question is another: Is the modern medical school designed to enhance these desirable qualities of personality and character and to direct them along the proper channels? If we somewhat arbitrarily take the "effective personality" to mean the sum total of an individual's ideas of ethics, government, of all phases of social inter-relation—in other words, his "philosophy of life," then the standard medical curriculum falls far short. For in analyzing the answers to 3, 4, 5, 15, 22, 25, 27—the "effective personality" is apparently a resultant only of extra-curricular activities and study. As a matter of fact, in the stress of mere bookish activity there is grave danger of dwarfing this moral and emotional development of the student so that he never does attain a really "effective personality." It is important that this development keep equal pace with his mental growth, for it is psychological and ethical growth with eventual maturity that marks the ideal doctor (and, incidentally, the really educated man in any field). Maturity confers on him understanding, and with understanding comes freedom from prejudice, adaptability to all classes and stations. Since "there can be no untouchables in disease," the ideal doctor must be a wellspring of human sympathy completely without regard to race or creed.

About character, the survey has much to say (see particularly answers to 8, 9, 10, 11, 12, 13, 18, 20). The evidences of "dubious dealings" in the classroom point at some defects in character. But we cannot believe this tells the whole story. There is no reason to suppose that medical students, as a whole, are any more dishonest than comparable groups

(Continued on page 37)

CURARE

A. WM. JACKMAN and R. HECHT

Curare is a name, among several others, of an extract from the roots and bark of several plants of the genus *Strychnos*. Its preparation is shrouded in mystery due to superstition of the South American Indians. The drug is used by these primitive people as an arrow poison, for both food and defense purposes. Preparations of the extract are masses of a brownish color, somewhat soluble in water, more soluble in acid and having a bitter taste.

Strychnine, the common alkaloid, is also derived from a species of the *Strychnos* plants, *Strychnos Nux Vomica*. The word "strychnos" is Greek for "nightshade". This name apparently is a common term for a group of plants. "Deadly nightshade" is the common name for the plant from which atropine is obtained, or scientifically named, *Atropa Belladonna*.

Curare, in the form in which it is to this day obtained on the market, was brought to Europe by Sir Walter Raleigh in 1595 (1).*

Our knowledge until very recently was substantially the same as that which Claude Bernard (2) gave us in 1857. He first showed the site of action. Boehm (3) first described the types of curare available as pot-, gourd-, or tube-curare depending on the type of container in which the various preparations reached civilization. According to him there are several alkaloids distributed as follows in the preparations: from tubocurare, an extract of undetermined origin, one can isolate tubocurarine and curine; from gourd-curare, curarine; from pot-curare, protocurarine, protocurine, and protocuridine. Protocurarine is said by some investigators to be stronger than curarine, though both are said to have the same typical curare effect. Tubocurarine, showing a much weaker muscle-nerve effect, has a stronger strychnine effect. Curine has no curare effect, but first stimulates then depresses the heart.

Boehm (3) in 1887 and Lewin (5) in 1923 described the preparation of curarine from gourd-curare. According to these authorities the structure is similar to that of strychnine. Spath, Leith, and Ladeck (14) corroborated some of Boehm's earlier work (15), using some of Boehm's own preparations of the alkaloid. Dr. A. R. McIntyre at the University of

Nebraska, in a personal communication to one of the authors, refers to King's work (16), in which the suggestion is put forth that the active alkaloids have as their basic structure certain tertiary amines.

Weber (6) reviews the early literature and is of interest only from an historical point of view primarily, but among other things he shows that certain other compounds have an action similar to that of curare. Since we are, however, interested in curare only a list of these will be given. The curare effect of many of these is merely a side effect, demonstrable only in frogs, being obscured by other actions in mammals, (1). Among these are: ammonium bases, certain amines, choline, muscarine, methyl strychnine, guanidine, pyridine, quinoline, thalline, the nicotine series, piperidine, morphine and its related alkaloids, cocaine, camphor in frogs but not in homothermal animals, certain putrefactive amines, products of muscle metabolism, and botulinus toxin. Coniine (propyl piperidine) shows something of a curare effect. The breathing becomes weaker and slower and finally stops (4). The asphyxia seems to be due to a partial paralysis of the peripheral nerves. Coniine, as a matter of passing interest, was the alkaloid said to have been drunk by Socrates and the first alkaloid to be synthesized in the laboratory. In the case of coniine a paralysis of the sympathetic ganglia preceded by a short stage of stimulation is shown with doses insufficient to cause paralysis of the motor nerves. Gelsemium and sparteine, two slightly known preparations also produce this typical paralysis.

Curare resembles in some of its actions certain other drugs. Some of its preparations show a predominance of stimulation of the spinal cord, a strychnine-like action, and thus may cause convulsions. Like nicotine, it depresses autonomic ganglia so that stimulation of preganglionic fibres no longer is effective but the usual effect can be elicited by stimulating the postganglionic fibre. This phenomenon was used by Langley to trace the course of many such fibres, (7).

To be effective, curare must be introduced into an animal parenterally. On oral ingestion, if there are no breaks in the continuity of the gastro-intestinal mucosa, there is no effect. The material is not

*Figures in parenthesis refer to bibliography on page 36.

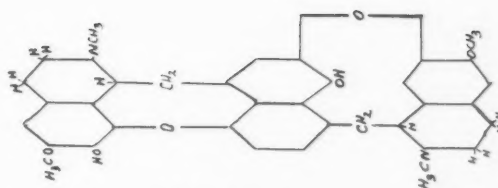
destroyed by the digestive enzymes but is broken down by intestinal bacteria. There are, in addition, two theories to account for this inactivity, namely, one, that the absorption is so slow that effective concentrations are never attained because the drug is excreted as rapidly as it is absorbed, and the other, that a site of detoxication exists. This has been postulated as being in the gastric mucosa or in the liver. The last is somewhat untenable as at least a part of the material is excreted by the kidney unchanged.

Claude Bernard (2) showed the site of action to be peripheral and not central by ligation of an entire frog leg with the exception of the sciatic nerve. On stimulation of the nerve after the injection there was a muscle contraction because the nerve was free to carry impulses and no curare could get into the leg because of the ligation of the vessels. This could not have occurred if the action were central. On immersion of the nerve trunk in a suspension of curare with the muscle free of the material, followed by stimulation of the nerve, there was again a contraction. But if the muscle were immersed and the nerve stimulated, no contraction appeared. Stimulation of muscle fibres themselves produced a contraction. The junction between nerve and muscle Bernard called the "receptive mechanism", now known as the myoneural junction.

Curare has no action on the sensory nerves and cannot be used as an anesthetic.

The symptoms of curare poisoning are a progressive paralysis of skeletal muscle. The order of this appearance is somewhat typical. First the short muscles of the toes and hands, then the limbs, head, neck, thoracic, diaphragmatic and abdominal muscles, lose their power of function. Muscles which contain larger amounts of oxygen seem to be resistant to the drug. Early after the injection there is an inability to carry out coordinated movement while single muscles still are capable of function and finally even these isolated actions fail. Consciousness is maintained throughout until death sets in. That death is due to asphyxia can be shown by the use of artificial respiration. The material is eliminated by the kidney and recovery is first shown by the spontaneous return of function to the respiratory muscles, if the intoxication is not too profound. There is some danger from the protracted use of artificial respiration by the Schaeffer method. Other methods are available such as pressure insufflation and the recent automatic respirator so that this criticism seems to have less weight at the present time.

Graphs of the action of curare on a muscle-nerve preparation indicate an inability to sustained effort on



BEBEERINE

repeated stimulation. Each contraction is normal but fatigue begins earlier than normal. The height of each contraction is normal but rapidly becomes lowered. The effective current must be successively increased until no amount of stimulation will cause a contraction.

Curare has no effect on the nerve endings of invertebrates (8). In poikilothermic vertebrates such as the frog, recovery often occurs if the animals are kept moist, because they breathe through the skin. In homothermal animals the respiratory paralysis can usually be relieved by physostigmine. As stated earlier these muscles are the first to regain their function and if this can be accomplished there seems to be little effect from the drug.

There are side effects which are relatively unimportant. There is an inconstant glycosuria (9), which cannot be entirely prevented by artificial respiration. In other words, the glycosuria seems to be due to curare and not entirely an effect of asphyxia. The output of adrenalin is markedly decreased (10) with doses which paralyze skeletal muscle. Bidder (11) found no effect on smooth muscle while Ikeda (12) using excised intestine, found an increase in the tone of the muscle. Others (13) find that, like atropine, there is no abolition of motor response of the urinary bladder to sympathetic and parasympathetic stimulation in cats. Autonomic ganglia, as noted before, are depressed but not as strongly as with nicotine (7). In spite of the maintenance of artificial respiration in animals poisoned with curare there is an initial fall of blood pressure (14) followed by an increased cardiac rate, both of which last only a short time, then return to normal.

King (16), quoting and confirming Boehm (15), showed that curare is an amorphous mass containing active principles which are divisible into a so-called "quaternary fraction" and a "non-quaternary fraction" with saponin which forms a stable emulsion. The molecular formula of Spath, Leith, and Ladeck (14) agreed with that of Boehm earlier (15) and was finally recognized as being the levo modification of bebeerine which is dextro-rotatory. Bebeerine is an

alkaloid from the *Radix Pareirae bravae*, said to be the dried roots of *Chondrodendron tomentosum* of Ruiz and Pavon. Since curare is limited, King worked with bebeerine and by a complex series of degradations and other chemical processes arrived at the conclusion that O-methyl tubocurarine chloride and O-methyl bebeerine methochloride were diastereoisomerides. The alkaloids present in curare are entirely phenolic in nature, mostly insoluble in chloroform and ether. Further work showed them to be phenolic isoquinoline compounds united by ether and methylene linkages. One of the alkaloids of Boehm and another obtained by King are insoluble in all solvents except aqueous pyridine which cannot be completely separated from the alkaloid so that no satisfactory analysis could be obtained.

King finally elucidated a structure for bebeerine and proposed one of two structural formulae for tubocurarine. It is also King's observation that certain of his preparations give no Millon reaction and that others do. Observing that phenols containing only one other substituent in the ring such as guaiacol and the three cresols do give a positive Millon but that certain others such as thymol, carvacrol, alpha naphthol and isovanillic acid do not, he recalled that these compounds have free positions ortho and para to the hydroxyl. Beta naphthol, vanillin, and methyl vanillate give a positive Millon. These latter compounds have free ortho and occupied para positions. When there are three substituents beside hydroxyl in the ring the Millon is negative, as in the case of corybulbine (an isoquinoline alkaloid of the corydaline family with an isoquinoline nucleus substituted in positions 6 and 7 by hydroxyl and methoxy respectively). Bisbenzyl isoquinoline alkaloids as bebeerine and tubocurarine chloride give a positive Millon but another alkaloid he (King) isolated does not give the reaction. His conclusion is that there must be some difference in structure which he has not accounted for.

In the Department of Physiological Chemistry of The Chicago Medical School, under the direction of Dr. R. G. Roberts, the authors have attempted to isolate some active fractions from curare by means of treatment with liquid ammonia. Merck's curare is partly soluble in liquid ammonia and the drug is not inactivated by this liquefied gas. The fractionation is carried out in a closed system of Dewar flasks, and sintered glass filters are used. The soluble fraction is the color of amber in solution, but on evaporation of the liquid ammonia it becomes a shiny black. The

(Continued on page 35)

Who's Who

DR. SICHER

Professor Harry Sicher was born in 1889 in Vienna, not far from the world famous University Medical School and General Hospital, where he was to spend so much of his life as student and teacher. He graduated with honors from the University of Vienna Faculty of Medicine in 1913 and was first a demonstrator, then an assistant under Professors Zuckerkandl and Tandler at the First Anatomical Institute of the Medical School. Later he became demonstrator and assistant at the Dental School. In 1920 he was appointed Instructor at the Dental School and in 1933 Extraordinary Professor at the University of Vienna.

Professor Sicher spent almost 30 years at the Anatomical Institute collaborating with Professor Tandler and doing experimental work of his own. He has published 72 scientific papers and 5 textbooks on anatomical and embryological subjects. He also practiced oral surgery. In 1939 he came to The Chicago Medical School and is Associate Professor of Neuro-Anatomy, which, his students will testify, he teaches with rare ability.

DR. KRAATZ

Dr. Charles Parry Kraatz, Instructor of Physiology and Pharmacology, is one of the younger members of The Chicago Medical School faculty. He has spent almost one-third of his life (11 years out of 35) in the field of gonadotropic hormones and keeps up with the subject not only through the literature but by experimental work as well. His interest in the field may be said to have started in 1930, when he gave up his idea of a career in the world of dramatics to go back to school and study science. In 1932, he received his A.M. from the University of Kentucky, having done his work on the endocrines of garter snakes. In 1936, he received his Ph.D. from the University of Cincinnati for his work on pituitary hormones. In that same year he came to The Chicago Medical School where, in spite of his busy life as a teacher, he has continued his researches, especially on the relation of the thyroid hormone to the ovarian cycle.

Dr. Samuel Bard, who helped organize what is now College of Physicians and Surgeons at Columbia University, said "New names are always deceiving, new theories are mostly false or useless, and new remedies for a time are dangerous." He is not alone.

Abstracts

H. SLOAN and F. B. WARNER

A SPECIFIC PRECIPITIN ANTISERUM FOR CARCINOMA PROTEIN. L. S. Mann and W. H. Welker. *American Journal of Cancer*, 39: 360, July, 1940.

In the past attempts to make specific antisera for normal and malignant tissues, the stumbling block has been that blood cannot be completely removed, with the result that the antisera reacted with the blood of the recipient. Attempts to remove the blood antibodies by adsorption resulted in a great loss of tissue antibodies also. Spinka and Weichselbaum, by fixing the finely ground washed tissue on aluminum cream and injecting the material intramuscularly, found that rabbits lost the antibodies for blood in a period of one to six months, whereas the titre for the tissue proteins remained high.

Gastric carcinoma, from which normal tissue had been dissected, was ground in a ball mill for forty-eight hours, filtered through cheese cloth, and the filtrate washed in a high speed centrifugal machine until the supernatant fluid no longer gave a positive biuret test. The tissue was adsorbed by aluminum cream and injected into rabbits.

The antiserum thus prepared showed a positive precipitin reaction with the original suspension of malignant tissue, and the serum of patients with gastric carcinoma (thus showing that the carcinoma put out a specific protein into the serum) did not react with normal fresh human tissues, with the exception of thyroid, and is species specific.

Although there may be cross precipitation between different types of carcinomatous sera, i.e. gastric and cervical carcinoma, and the specific antiserum for the carcinoma protein found in the serum of these patients, it is thought that the malignant protein is specific, that the use of this antiserum is an aid in diagnosis of cancer, and perhaps will possibly be a factor in specific therapy of cancer.

THE USE OF ENEMATA BY PRIMITIVE PEOPLES, Joan Lillico. *Annals of Medical History*, 3:55, Jan., 1941.

The enema, described in an Egyptian papyrus of the 14th century B.C., used by the Babylonians, Assy-

rians, Greeks and Romans, described by Celsus in his "De Re Medica", was also used by primitive peoples of Africa and America.

In Africa, the use of enemata is wide spread, probably as a result of the constipating diet. Many tribes so enjoy the enema that it is at times used to excess.

The Arabs and Moors of Northern Africa, on the contrary, abhor the use of enemata. It is probable that this Moslem aversion can be traced back to the rigid laws against sodomy as embodied in the Koran.

Apparatus used includes hollow reeds, perforated horns or gourds, wooden funnels or an animal bladder attached to a reed or hollow bone. Vaginal and urethral douches are also employed for various diseases.

THE EFFECT OF SMOKING TOBACCO ON GASTRIC ACIDITY, Irving Ehrenfeld, A.B., M.D. and Mills Sturtevant, M.D. *American Journal of Medical Sciences*, 201:81, Jan., 1941.

The authors did fractional gastric analyses on patients on successive mornings, after a twelve hour fasting period. One morning the analyses were made without smoking; the next analysis was made after smoking two cigarettes. Specimens were taken every fifteen minutes and titrated with .1N sodium hydrate solution. There was a definite increase in gastric acidity in a significant number of those with peptic ulcer, which may have been associated with nicotine, for there was a slight increase or none at all when partially denicotinized cigarettes were used. The increase in acidity was greater in all ulcer patients than in normal people.

THE NAUSEA AND VOMITING OF PREGNANCY DUE TO ALLERGIC REACTION. J. William Finch. *American Journal of Obstetrics and Gynecology*, 40: 1029, Dec., 1940.

The author, after a study of 192 cases, has found that women suffering from nausea and vomiting of pregnancy give positive intradermal tests to natural corpus luteum hormone. Pregnant women, not so afflicted, give negative tests. Non-pregnant women who have nausea or vomit during their menstrual periods also give a positive test. The intradermal reaction is negative with synthetic corpus luteum and therefore suggests, that there is at least one more substance present besides progesterin in the corpus luteum. Desensitization with natural corpus luteum hormone relieves and removes the symptoms.



IN MEMORIAM

DR. ALLAN J. HRUBY

1890 — 1939

On November 18, 1939, The Chicago Medical School lost a member of its staff whose place in the hearts of his students and colleagues can never be filled.

Dr. Allan Joseph Hruby was born April 27, 1890, in Chicago. He was educated at the University of Illinois College of Medicine and received his M.D. degree in 1913. He was associated with The Chicago Medical School since 1935 and at the time of his death was Professor of Clinical Medicine.

His reputation was gained in the field of tuberculosis in which he had for more than a decade been a national leader in the fight against that disease. As a former medical superintendent and secretary and trustee of the Chicago Municipal Tuberculosis Sanitarium and in his association with the Cook County Hospital, he gained a vast clinical experience which brought him recognition as an authority on the subject. His death at the age of 49 brought to a close a career which was certain to have attained even greater prestige.

His passing must be felt with deepest regret by all who knew him, as physician, teacher, and friend.

DR. OLA A. KIBLER

1881 — 1940

Dr. Ola A. Kibler, senior physician at Chicago State Hospital and Professor of Psychiatry at the Chicago Medical School passed away on December 15, 1940.

He was graduated from the College of Physicians and Surgeons in St. Louis, Missouri in 1906. He practiced general medicine for several years in Illinois and entered Kankakee State Hospital as an interne in 1914. In 1915 he was promoted to Assistant Physician at that institution. He had a thorough training in mental diseases up until 1919 at which time he was appointed to the staff of the Chicago State Hospital. In 1922 he was promoted to Senior Physician which position he held till his death. He has been affiliated with the Chicago Medical School for 17 years and in that time has endeared himself to many of us. We wish herein to pay tribute to Dr. Kibler; he has been a good teacher and a friend of his colleagues, his students, and his patients as well. His complete understanding and keen sense of humor increase a hundred fold the loss which we all feel.

Further we wish to extend our deepest sympathy to his wife Martha and his daughter Gloria.



PHI LAMBDA KAPPA

The Alpha Rho Chapter of Phi Lambda Kappa has entered upon a year of worthwhile activity at The Chicago Medical School. The National Convention, held in Chicago during Christmas vacation, was a marked success, with Alpha Rho being one of the hosts to Phi Lams from all over the country.

The series of dinner meetings is being continued, designed to bring to the fraternity the varied opinions of medical authorities of Chicago. The most recent speaker was Dr. Gaberman, of Cook County Hospital, who spoke on "Medical Economics". This talk, on the economic and social aspects of medicine today, was received enthusiastically by the fraternity.

The most prominent activity in view is the initiation of members which will take place on March 9th.

The Alpha Rho Chapter at The Chicago Medical School is also pleased to announce the election of Dr. M. I. Kaplan as Honorary Worthy Superior. It is his duty to bring the present members and alumni of Alpha Rho into closer cooperation, and to act in an advisory capacity on the many activities of the fraternity.

NU SIGMA CHI

The social season of Nu Sigma Chi was begun enthusiastically with a smoker at the Hotel Stevens; Dr. Sheinin was the speaker of the evening. Among those present were Dr. Kraatz who very ably represented the faculty, and Drs. Yacullo, Markoutsas, Gould, and Fardy of the Alumni group.

Nu Sigma Chi's are all looking forward to further activities along this same path. The highlight of the year will be the formal initiation of some twenty pledges at a dinner-dance at the Shoreland Hotel. A large turnout of Alumni is expected and a grand revival of old friendships. The Fraternity wishes to extend an invitation to its former members to become active in fraternal affairs. The new men and old alike look forward to meeting you and building the foundations for a greater and more active organization than we have yet seen here. We are full of hopes, anticipating a large group of active members, who will insure a great future for Nu Sigma Chi.

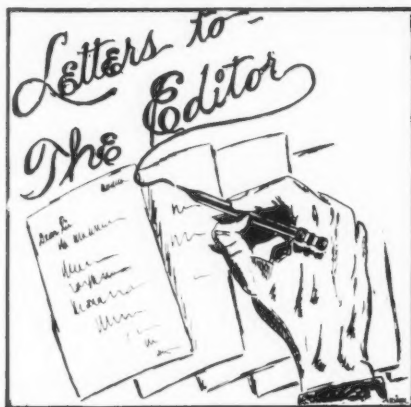
THE ASSOCIATION OF MEDICAL STUDENTS

This quarter has seen another milestone in the development of the A. M. S. at Chicago Medical School as an organization of students by the students. It has seen educational meetings supported by a majority of the student body; one of the most successful being an address by Dr. George E. Park of the Department of Ophthalmology of Northwestern Medical School on the subject of Strabismus. It has seen the beginnings of group-buying of instruments at substantial savings; of a bi-monthly mimeographed news-letter; of business meetings attended by as many as two hundred students. And most important, it has seen the reorganization of the chapter with the election of a truly representative executive committee composed of two members of each class selected by the class. The action was taken in order to have a representative body assume the responsibilities and carry on the activities and functions of the organization.

During the Christmas recess, seven of our students attended and participated in the most successful convention in the history of the national organization. Along with two hundred delegates from thirty-four medical schools scattered throughout the country, they enjoyed the fine program of speakers and clinics, heard of the wonderful opportunities of the Schering award, participated in the discussions and helped formulate the resolutions and the policies of the national organization. In cooperation with the delegates of the other Chicago schools, they presented a panel on health insurance, selected their regional vice-president and successfully invited the convention to Chicago for the coming year.

In the city, there has been a marked activation of the regional committee with members of the Chicago Medical School chapter playing an important role in its expanding program. Closer cooperation on problems of common interest has resulted among the members of the various medical schools. A more intimate relationship has been established with the Interne Council and with dental students in the city. New chapters are in the process of formation at two of the six medical schools in the locale. Preparatory work has begun for the coming convention.

With this growth,—local, regional and national—a tremendous need for increased cooperation of all of the students has developed. The benefits derived from such cooperation far exceed the actual work necessary to achieve them. Thus we can hope for and look forward to a bigger and better A. M. S. in this coming year.



Here is a letter we received from a member of the Board of Directors.

To the Editor:

I certainly have enjoyed going through Volume 1, No. 1 of the Chicago Medical School Quarterly. This splendid magazine makes a fine impression. I am surely glad to see that something of this kind was started. I believe that all of the board members will be glad to receive a copy of it to cement their enthusiasm and interest in the fine work you are doing out there.

J. EDWIN PASEK,

Vice-President of the American Technical Society.

To the Editor:

I recently attended a motion picture at the school on the subject of the prevention of conception. The treatment of the subject was excellent, but I felt at the end that I had learned nothing new and certainly did not feel competent in any way to advise a patient on this matter. I understand that we will receive no further formal instruction. Would it not perhaps be possible to secure an addition to our curriculum on this matter? I believe this would be a good step toward demonstrating our progressive character as a rising medical school.

A SOPHOMORE.

To the Editor:

On looking through your December publication I was greatly impressed by the articles, especially those written by faculty members. Personally I believe that we as students would be greatly interested in having short biographical sketches of the lives and accomplishments of our professors and also of our Dean! Also it would be most interesting to have short articles written by our instructors as to the place and value of their particular subjects in the medical curriculum. I believe that you and your staff have made a fine start in the right direction with

your first issue and I am looking forward to your future issues.

DAVID EDELSON,
President, Junior Class.

* * *

To the Editor:

Enclosed is my check for three dollars. I really was well pleased to hear of CMS by means of the Quarterly, down here in New Mexico. The articles were excellent and I'm hoping for a continuation of the March of Progress. Congratulations!

Albuquerque, N. M. A. J. TANNY, M.D.,

* * *

To the Editor:

Please accept the enclosed three dollars for membership in the Alumni Association of the Chicago Medical School and for the Quarterly which I consider to be an excellent idea.

Chicago, Ill. B. S. FREEDMAN, M.D.

* * *

To the Editor:

Enclosed please find check for three dollars as my contribution to the Quarterly and the Alumni Association of the Chicago Medical School.

I feel that your work is very worthy and hope that it is continued in the years to come. It is with this feeling that I am happy to subscribe to the Quarterly.

Champaign, Ill.

I. BRILL, M.D.

* * *

To the Editor:

I was most pleasantly surprised with the first issue of the CMS Quarterly. I had an appendectomy five days ago. On the fifth post-operative day it arrived as a most welcome friend and it made me very happy.

I hope it will meet the success it really deserves.

Elgin, Ill.

JULIUS FREUND, M.D.

* * *

To the Editor:

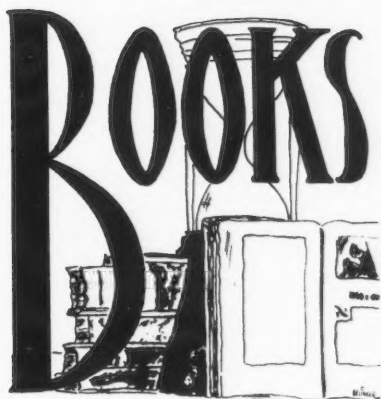
Enjoyed the Quarterly very much. Unless there is some reason, I believe it would interest the alumni to see a little more news about the school itself. By this I mean its progress, its prospects, etc. Enclosed please find my check for three dollars.

H. B. ERICKSON, M.D.,

We wish to thank all those who showed enough interest in the Quarterly to write in, and will try to devote more space to this feature in future issues. Letters are always welcome, so please write.

THE EDITOR.

THE QUARTERLY



MANAGEMENT OF THE CARDIAC PATIENT
by W. G. LEAMAN, M.D. Lippincott, 1940, 705 pp.
\$6.50.

In concise but thorough form, Dr. Leaman has given the profession a comprehensive volume on the care and management of the cardiac patient. This text supplies a much needed addition to any library, and fulfills the demands of the specialist, the general practitioner, and the student. The etiology, symptoms, signs, and diagnosis of each type of cardiac involvement are considered briefly for correlation with the management of each condition.

The first portion of the book is devoted to an explanation of the instruments and technics which aid in cardiac diagnosis and treatment, and this section is accompanied by many graphic illustrations. The last part of the volume offers a review of electrocardiography in which controversial and conflicting views are avoided.

Throughout the text, Dr. Leaman has considered treatment from the standpoint of etiology and functional capacity, and he has discarded the old-fashioned system of classifying cardiacs on a basis of structural damage. Surgical cardiac procedures have been relegated to their proper point of importance, and one chapter concerns the management of extracardiac surgery to which the cardiac patient may be subjected. Cardiac emergencies are noted under one heading, and this chapter forms a noteworthy section of the book. There is also a discussion concerning the sociological aspects of cardiac management with particular respect to the futures and employment of cardiacs in the social and business world. The availability of this text affords the medical profession an excellent desk reference-work, which places special emphasis on the clinical management of the cardiac patient.

Dr. Goldfinger

THE QUARTERLY

OBSTETRICS by J. W. WILLIAMS. Edited by H. J. Stauder, M.D., F.A.C.S. (Eighth Edition) D. Appleton-Century Co. 1401 pp. \$10.00.

This eighth edition of William's Obstetrics has been so completely rewritten that it is now a practical volume for student and practitioner alike, a rare combination indeed.

Due consideration has been given to the morphologic classification of Caldwell and Molay, and its value in evaluating problems of dystocia. Johnson, Caldwell, and Molay, and Thom's methods of X-ray pelvimetry are discussed.

An entirely new and most interesting chapter has been added dealing with the causes of sudden maternal death. Although not as exhaustive as other subjects in the book, it nevertheless gives food for thought.

Diseases of the urinary system are discussed in detail as well as urologic diagnostic methods. The author emphasizes the fact that interpretation of findings presupposes a knowledge of the variations in the urinary tract associated with pregnancy.

Puerperal sepsis is exhaustively covered as is its treatment with sulfanilamide compounds.

Both the author and publisher have rendered a notable service by making this valuable obstetrical text-book available.

L. Goodman, M.D.

DISEASES OF INFANCY AND CHILDHOOD by HOLT AND MCINTOSH. (Eleventh Edition). D. Appleton-Century Co., 1939. 1421 pp. \$10.00.

The eleventh revised edition of Holt and McIntosh, *Diseases of Infancy and Childhood*, establishes further the important place the name of Holt deserves in the teaching of Pediatrics.

Simplicity and clarity of writing coupled with personal experiences and a very extensive collaboration make this text an excellent investment for instruction and reference.

The material has been amplified to include several new subjects. Revisions by the original authors and their co-authors have brought the subjects up to the minute.

The vital and timely subject of chemotherapy is well covered though brief and the very important deficiency diseases receive an excellent description. The newer phases of the vitamin subject are brought up to date along with complete discussions of our old friends rickets and scurvy.

Allergy comes into its own in this volume, for more

and more is this phase of medicine assuming pediatric importance.

The endocrine subject is made as clear as possible in light of the paucity of our present day information.

The new chapter on eye discusses conditions of general interest to pediatricians.

Explosion of the "Thymus Myth" in this text meets with my especial favor as it coincides so well with my own humble opinion. The discussion on this subject will clarify many befuddled minds on the matter of status thymico lymphaticus.

It is interesting and I think wise to include rheumatic fever under specific infectious diseases but whether or not chorea belongs in that category is still questionable.

Special mention might be made of the expert handling of the subjects of hemorrhagic diseases of the new born, nutritional requirements of children, congenital heart disease, psychopathological problems and the all inclusive subject of skin.

The foregoing should not make this statement necessary, "I recommend it as an investment for instruction and reference." M. P. Borovsky, M.D.

•
TREATMENT IN GENERAL PRACTICE by HARRY BECKMAN, M.D. (Third Edition). Saunders, 1940. 787 pp. \$10.00.

This book especially serves the need of the general practitioner in presenting an accurate and completely detailed account of the management of the everyday conditions that the practitioner is called upon to treat.

All of the important methods of treating each disease are discussed in plain language, and, what is more important, the author evaluates each of the treatments for the reader. The concise general descriptions which precede the therapeutic accounts are another valuable feature of the book.

The sections on obesity and malnutrition, diseases of the gastro-intestinal tract, endocrine disturbances, and acute poisoning are only a few examples of the general excellence with which all of the subject matter is handled.

Harold Ovenu, B.S., M.D.

•
FRACTURES by PAUL B. MAGNUSON, M.D., F.A.C.S. (Third Edition). J. B. Lippincott Co., 1939. \$5.00.

The present edition of Dr. Magnuson's "Fractures" enhances the value of his earlier editions. He has incorporated in a single volume a tremendous amount

of material in a lucid and comprehensive manner.

This volume can be profitably employed by student, the occasional surgeon, or the orthopedic specialist.

To me, one of its greatest recommendations is the fact that Doctor Magnuson in preparing the book has drawn so largely on his own experience and observation and not followed the repetitious processes one is so prone to find in works of this sort. The book abounds in many original illustrations of unusual clarity and assistance in understanding the text.

Many new operative procedures are described and the use of skeletal traction is given much more space than in the previous editions.

I. Edward Bishkow, M.D., F.A.C.S.

•
OBSTETRICS AND GYNECOLOGY by the Departmental Staff of the University of Chicago and other contributors. Edited by FRED L. ADAIR. Two octavo volumes, Lea & Febiger, publishers, Philadelphia, Pa. 2031 pp. \$20.00.

Many individual texts of obstetrics and gynecology have been published. Each book in addition to specific knowledge has reflected a certain attitude or approach of the author. This work is different from all the others. It is the first text which intimately intertwines the concepts of obstetrics and gynecology throughout. The authors believe that the female pelvis as a system of reproduction cannot be divorced from disease and pathology. They do not stop here but continue with the broader concept that the pelvis is intimately related to the individual. This fact is of course fundamentally expressed in all books, viz. that the organ is part of the bodily processes, affecting the individual as a whole in health and disease; but here, it hovers in the background yet prominent at all times. This manner serves to impress a clearer insight of the female organism and its problems. The result achieves a sympathetic and intimate physician-patient relationship. This approach is enhanced by an interesting fluent style of writing so that the work reads in an easy fashion.

The first volume opens with clear cut definitions and a historical background of woman's problems. In an extremely able manner a physio-endocrine-bio-pathologic perspective of the primary female organs, secondary organs, and body is presented defining the changes in conception and the growth and changes from fetal development to menopause i.e., the female cycle of life. This occupies about one-half of the first volume. Here cumulative and advanced endocrine

knowledge is presented in such fashion that a clear understanding of estrogenic and gonadotropic substances and their indications is defined. An added feature is the summation of endocrine products in chart form which aids in clarifying the various complexities of nomenclature of the various proprietaries. The use of charts is carried throughout the text adding to the value and simplification of such other subjects as fetal ossification, development of the bony pelvis and organs, etc. The second half of the first volume considers the anatomy, histology, and physiology of the female pelvis, prenatal care and the problems of obstetrics continuing into the second volume with obstetrics and gynecology, pediatrics, medicine, surgery, orthopedics, and related subjects which the doctor must appreciate in adequately caring for his patient. An interesting feature is the presentation of selected case histories of patients with the pathologic conditions discussed. A further feature is the illustrations. These are profusely used for clarification. Surgical techniques from accredited sources, which the operator may be called on to do, for example circumcision, are portrayed in step by step procedure. Diagrammatic sketches, for example the growth of the uterus in various stages of pregnancy, are shown. Mere words cannot evoke the grasp of the explanation that sketches can and the authors have taken advantage of this fact.

A great deal of work and thought has evidently gone into these volumes, written by men distinguished in their various respective fields. This work is recommended as a valuable addition for the student and general practitioner, and a convenient reference for any library.

S. L. Schreiber, M.D.

•

CONTROL OF CONCEPTION by ROBERT LATOU DICKINSON, M.D., F.A.C.S. Williams & Wilkins Co., 1938. 390 pp. \$3.50.

Here is finally a definitive work on a subject of vital importance to all, but especially to the physician, who is so often "called upon to clear the incessant confusion on the main issues concerning control of conception." It is the closest thing yet to a textbook on contraception and is written by a recognized authority, a former Professor of Obstetrics and Gynecology and a former President of the American Gynecological Society.

The book is profusely illustrated by the author's

talented hand, and the anatomical drawings at last make clear many a hazy point on the male and female sexual organs that the dissecting room and texts could not clear up. The author's style of writing also merits a special word of commendation. For example, on the very first page: "Facts must be sought that facts may be taught; meanwhile present knowledge calls for succinct statement." Or again: "From the legal angle, quite as much as from the practical angle, one thing is too evident to need much emphasis. This is that the vital point in diminution of abortion is removal of statutory restrictions on diffusion of knowledge of effective control of conception. Thus we can rescue abortion from the abortionist."

The topic with which the book deals may be a restricted one but the subjects discussed cover a wide and woefully neglected field. The anatomy and physiology of coitus are investigated, as well as every type of contraceptive technique and device from the most primitive methods of abstinence to the latest ideas on immunization of the female organism against sperm cells. There is also an excellent bibliography of 186 articles and texts for the person interested in pursuing the matter further.

It seems to this reviewer that here is a volume which belongs on every doctor's bookshelf. He can use it to learn a field not covered in his medical texts or medical school and he can lend it to those of his patients who can benefit from this knowledge.

A. H.

•

LET'S TALK ABOUT YOUR BABY by H. K. TENNEY. Univ. of Minnesota Press. 115 pp. \$1.00.

"Let's Talk About Your Baby" is written in a very light but interesting style. It is instructive without becoming pedantic. Davie (the baby) for the first time is given leave to speak. He expresses his thoughts and reactions to the new elements with which he comes in contact every day. For the young mother the book serves as an excellent guide and fountain of information while watching the progress of her baby; all the small problems and practical details are mentioned and discussed, and so baby-raising is put on a sound common-sense basis that is highly reassuring to fearful and imaginative young parents.

This book is recommended to medical students with the thought in mind that a greater appreciation of the parent's problems and an insight into the baby's wants might be gained by its being read. E. H. E.

Personalities

U. G. Darling

J. C. Dinsmore



ULYSSES GRANT DARLING

To the men in the Junior year, Dr. Darling needs no introduction, but for those who have as yet had no personal contact with him, it is apropos to elaborate on his history and medical affiliations.

Dr. Darling graduated from the University of Illinois' College of Physicians and Surgeons in 1890. He was Attending Neurologist at the West Side Free Dispensary from 1896-1906, and also assumed the position of Assistant Professor of Psychiatry at the University of Illinois in 1900, and held it till 1913. During this time (1906-1913) he also became Resident Physician at the Oakwood Sanitarium at Lake Geneva, Wisconsin. He later became Professor of Psychiatry in the Medical Dept. of Loyola University (1913-1915.) From 1914-1918 he was Attending Neurologist at St. Anne's Hospital in Chicago. In 1918 he went to the Lake Geneva Sanitarium as Superintendent of that institution, which position he kept till 1921. Then he returned to the Illinois Post-graduate school and stayed there from 1921 to 1940. At the same time he was Attending Neurologist at the West Side Hospital. He has been Professor of Neurology and Psychiatry at The Chicago Medical School from 1928 till 1936. Since 1936 Dr. Darling has held the title of Professor Emeritus of Psychiatry at our school, and has just recently been elected Secretary of the Board of Directors of The Chicago Medical School.

An obvious but deserved conclusion is that Dr. Darling is an outstanding asset to the school's Board of Directors. His medical affiliations and complete background provide firm foundations for this state-

ment. His quick sensibility to the school, to the students, and to the Alumni, and his keen perspective, will serve as a guide for our own betterment.

JOHN C. DINSMORE

My first impression of Mr. Dinsmore was that of a busy business man at work. He had a surety and swiftness of purpose that belied his easy manner when I first spoke to him. He is a very friendly person, smiles readily at light remarks, and the information desired come easily. Born in Michigan in 1886, he was graduated from the University of Chicago in 1911. After experience in administration in the athletic department (1911-1913) he became purchasing agent for the University and held that position from 1913 till 1929. In 1929 he became superintendent of the University of Chicago Clinics (the official title of administrative and business manager of Billings Hospital, Bobs Roberts, Hicks-Ilwee, Max Epstein Dispensary, and Chicago Lying-In Hospital), and held that position till 1935. In 1936 he became head of the London branch of Sears, Roebuck & Co., and later became manager of Sears Associated, and in charge of concessions and agencies.

Besides the many business organizations that Mr. Dinsmore belongs to, he is a charter member of the American College of Hospital Administrators and Secretary of the University Hospital Executive Council.

He lectured at Cornell University in 1934 on Hospital Management; was Secretary of the American Hospital Association Committee on the Institute for Hospital Administrators from 1933-1935; Member of the Board of Trustees of the Chicago Hospital Association, 1935; member of the Editorial Board of Modern Hospital Magazine, 1933-1935; and he is now Vice-President and Director of the Automatic Canteen Co. of America, and President of Dinsmore Associates, Inc. Mr. Dinsmore has been a member of The Chicago Medical School Board of Directors since March 1938.

Further conversation convinced me that I was finally speaking to a man busier than a Quarterly editor trying to make deadline and pass his courses at the same time. The apparent key to the tremendous amount of work that Mr. Dinsmore has undertaken lies in the fact that there is an underlying spirit of selflessness in his personality, and great resources at his command. We are indeed fortunate in having as a member of our board and as acting business manager a man of such great enterprise, who is giving us so freely of his time and energy. E.H.E.

THE QUARTERLY

THE PHARMACIST'S DILEMMA

(Continued from page 7)

Palatable preparations can be easily concocted. For example, in prescribing cod liver oil for a rachitic child, the physician may make the oil more pleasant to the taste by adding 0.5% essential oils which impart an agreeable flavor to the oil without reducing the vitamin potency.

In prescribing cough medicine both for children and adults the physician has a wide variety of flavors which can be used to counteract the disagreeable taste of the salts which he incorporates. His choice of flavoring agents is so great that he may even prescribe a flavor for which the patient may have a predilection. The flavors more commonly used are orange, lemon and cherry and are generally prepared in syrup form.

The most important factor in prescription writing, in which the utmost care should be exercised, is dosage. Very often the physician may be prescribing medicine and at the same time answering questions asked by the patient, and unwittingly makes an error either in the dosage of a drug or in the directions for its preparation. It is true that the pharmacist endeavors to detect all over-dosages, but the best way to avoid mishaps is to make sure that the prescription is perfect before it is given to the patient.

Unfortunately, so-called trivial errors in dosage and direction of preparation may precipitate serious conditions and in some instances even prove fatal. To illustrate: A physician wrote the following prescription:—

R

Robert Jones

1235 S. 10th Ave.

Sulfanilamide gr XV

Make powders #10

Sig: one powder every five hours

Dr. A. B. M.D.

In this case the patient, Robert Jones, was a nine-month old infant, but the pharmacist was not cognizant of this fact, inasmuch as this very necessary information was not included on the prescription form. However, this daily dosage was just within the therapeutic limits for an adult. The dosage of sulfanilamide by mouth is calculated on the basis of 1 Gm. (15 grains) for each twenty pounds of body weight up to 100 pounds. 5 Gms. (75 grains) represent the maximum daily dose that can be used with safety in adults of average weight.

The intentions of the physician were that Robert

Jones receive $1\frac{1}{2}$ grains every five hours. However, instead of saying sulfanilamide grains 15, divide into ten powders, he wrote make powders #10. The pharmacist being in doubt whether the dosage called for 15 grains or $1\frac{1}{2}$ grains called the physician to ascertain which was the amount required. Because of this cooperation between pharmacist and physician, Robert Jones was spared a terrific over-dose of sulfanilamide which might have produced toxic effects and even caused his death.

Another case which might have caused serious effects was when a physician accidentally prescribed $1\frac{1}{2}$ grams of digitalis per dose when he meant $1\frac{1}{2}$ grains per dose. Here again, due to the tremendous over-dose, fatality would have been inevitable.

In reiteration, the importance of accurate prescription writing in the practice of medicine cannot be over emphasized. In this manner, the physician not only insures better treatment for his patient, but also gains the respect of his medical collaborator, the pharmacist.

CURARE

(Continued from page 26)

insoluble fraction is a light tan color and quite porous. Most of the physiological activity remains in the insoluble fraction. Merck's curare as sold resembles small pieces of black glass and forms a visible suspension in water. After treatment with liquid ammonia and no fractionation, the curare either becomes soluble in water or is very finely dispersed. After four 100cc. extractions on a 0.1 gm. sample of curare, fifty per cent of the curare will pass through a 3-G sintered glass filter. Work in progress consists in forming and extracting derivatives of curare with amphoteric substances in liquid ammonia.

There are several instances in which a reliable preparation of curare would be very welcome. In the violent convulsions which occur as part of the insulin treatment of dementia praecox, patients often traumatize themselves. Here curare would be of great value. In spastic paralyses, a relaxation of the hypertonic muscles would enable the patient to resume a more or less normal life. Heretofore, the only treatment was a long and tedious process of muscle re-education. In those cases of hydrophobia which develop convulsions (17) and in strychnine poisoning, a therapeutic paralysis might be just the thing to enable the patient to rest enough to overcome the poisoning and extreme fatigue (18), (19).

The main interest in curare is its paralyzing power. A determination of this is made under standard con-

ditions. This has been set as that quantity of curare which will paralyze in 15 minutes the righting reflex of a frog so that the animal can not recover its normal position in 1 minute, the curare being injected into the ventral lymph sac. At the same time the true curare nature is checked by stimulation of the exposed sciatic nerve and gastrocnemius muscle.

Work with curare is not new. There were accounts of its effect soon after its introduction into Europe. Claude Bernard first showed the site of action. Boehm and Lewin made the earliest contributions concerning the nature of the drug. Recent work has revealed much about the chemical nature of the material. King's work has done much toward elucidating the difficulties encountered in the determination of its structure. As yet no pure isolated substance is available.

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An interesting but little known bit of information is that Lister never knew of Pasteur's work in bacteriology and antiseptics, until Thomas Anderson, a chemist of Glasgow, called it to his attention. It was Anderson who supplied the first solution of carbolic acid which Lister used.

about the school

In the midst of the excitement, cynicisms, and agnostic speculations that many of us are experiencing or can observe, it may for a moment seem out of order to dwell on more or less materialistic thoughts. Nevertheless, it is more in place at this time to make some philosophical observations on what can easily be spoken of as the new order of things. Much water has passed under the bridge since the last issue went to press, and though the bridge is still the same structurally, the stream is more rapid and the trees on either side are greener and more promising. The most impressive change in the school has been in the students: not in the personnel particularly, but in the general attitude that prevails. Precedent and traditions are becoming more firmly established. Our faculty has become our friends as well as our teachers. The students have become aware of this, and in the main, good fellowship and friendliness has supplanted childish poutings and doubts. This is in keeping with the momentum of our developmental trend.

With apologies for the in media res introduction, a few timely observations can first be made about the excellent manner in which the students' health and other problems have been cared for. We acknowledge with due thanks the work done by our chapter of the A.M.S. to achieve this goal. Every student has had a chest plate taken along with the usual tuberculin tests; all have had a Wasserman or a Kahn test, and in general the students' health has been looked after in the best way possible. To Dr. Ovenu and other members of the school staff special commendations are in order for the selfless manner in which they took care of our influenza victims in our epidemic just past. Drs. Yacullo and Haller are to be thanked for their work last year for the student body. We are a much healthier group this year than last, and such efforts should not go unrecorded. They have helped make our outlook for the future a much more pleasant one, and have added to the general friendliness in our halls and rooms by helping to establish a common good.

In an effort to complete this inventory and satisfy the curious as well as the skeptics, it may be well to mention the new lounging room for the students, equipped with the best in furniture and radio apparatus; the new locker room; the enlarged library; and the women's lounge.

(Continued on page 38)

ORAL INFECTION

(Continued from page 19)

- (2) Measles begins as a catarrhal inflammation of the upper air passages. The tongue is furred and the white, creamy fur is thrown off in small flakes during the eruptive stage with underlying mucous membrane appearing smooth and red. Koplik spots consisting of small red spots with a central bluish-white area appear early in the disease.
- (3) Diphtheria often spreads to the mucous membrane of the mouth after a severe attack involving the tonsils and throat. The symptoms in the mouth are: difficulty of swallowing, and swollen tonsils with a grayish white membrane which is firmly adherent, and which, when removed, leaves a raw, bleeding area.
- (4) In typhoid, ulcerations of the uvula, cheeks, lips, or tongue appear about the first or second week. These are shallow ulcers which heal without leaving a defect.
- (5) Smallpox and chickenpox in the mouth consist of pustules which break down into ulcers.

The following dermatoses of the mouth are associated with skin diseases: eczema, tinea circinata, pemphigus, erysipelas, lichen planis, erythema multiforme, herpes zoster, lupus vulgaris, and purpura. Leukoplakia, or smoker's patch, is characterized by the formation of smooth, glistening, white patches on the mucous membranes of the mouth, tongue, and lips.

D. Stomatitis in Diseases of the Blood Forming Organs. Anemia may occur as a result of oral sepsis. Oral lesions may occur as a result of anemia.

- (1) Pernicious anemia shows a pallor of the lips and mucous membranes, and a tongue which is smooth, red, and glazed, with atrophy of the papillae and raw surfaces at the edges of the tongue.
- (2) Chronic myelogenous leukemia shows a hypertrophy and inflammation of the gingiva as an early symptom.
- (3) In acute leukemia, swelling and ulceration of the gingiva and gums and a secondary involvement of the cheek and jaw occurs. Regional lymph glands of the neck and jaw are also enlarged.

Thorough investigation into the etiology of diseases should be the universal practice among dentists and physicians. Since it has been shown that infections and lesions of the oral cavity and its contents can be the direct cause of systemic disturbances and that systemic disturbances may manifest themselves in the mouth, it is evident that cooperation of the physician and the dentist in the diagnosis and treatment of such conditions is of vital importance to the health of the patient.

SOCIAL ASPECTS OF STUDENTS

(Continued from page 22)

elsewhere. We feel that the crux of the situation lies rather in an archaic method of grading with its almost complete reliance on examination results. Grades come to assume a grotesque import in the student's mind, coupled with the real horrors of flunking out. This is sufficient to undermine the integrity of even the best student. The real danger in such a situation lies in the chance that such character defect may carry over into more important spheres after graduation and, when the going gets tough for the young physician, manifest itself in shoddy practices and questionable ethics.

Another fact of this problem of character and ethics is brought out by No. 18. The data on this question so impressed one physician that he was moved to write the Journal. The pertinence of Dr. Wallace's opinions warrant quoting his letter in full: "Perhaps I am an old-timer, having been fifty years in the profession. My father was a physician (Edinburgh, 1851.). He was taught and he taught me that any interference with the course of pregnancy was nothing less than murder. To think that, if legal, 68 per cent of the medical students of today would be willing to perform abortions on married or unmarried women, except after consultations and for pathological reasons, speaks hardly for the moral or religious ideals of these young people. In my opinion, the place to cure this condition is in the medical schools which should lead their students in the right direction."

Thomas Thacher, a preacher and physician (1667) wrote the first American Medical publication to be printed entitled, "A Brief Rule to Guide the Common People of New England how to order themselves and theirs in the Small Pocks or Measles."

It was a single printed page of practical directions, and the only medical work of the century to appear in print.

ABOUT THE SCHOOL

(Continued from page 36)

All these things have helped bring to the front the better feeling and harmony that we students as well as the others who habituate our building have begun to experience. It is hoped that much further advance will be made in this direction; the benefits derived from such a procedure are hardly reducible to single and concrete terms, but it can be said that beneath the hustle and fretting of the students as they prepare for exams, and behind the gruffness or discord that may sometimes be evident, there is a fundamental and sound appreciation for these extra-curricular advantages that we now enjoy. So many of us cry for tangibilities, forgetting at the moment our basic kinship to each other in this upset world — when the good deed coupled with a bit of altruism will go far to brighten your neighbor's life and help your own considerably. Your continued allegiance to yourself, your fellowman, and your school will eventually make you proud of them all.

The first degree of doctor of medicine in the Western Hemisphere was granted at the University in Peru in 1551, eighteen years after Pizzaro conquered the Incas (and the conquering wasn't done on the football field either.)

The first medical degree granted in these United States was an honorary degree conferred by legislative act at a session of the assembly of the colony of Rhode Island and Providence plantations which convened March 1st, 1663.

"the court doe therefore unanimously enacte and declare that the said Captayne John Cranston is lycinced and commistioned to administer phissicke and practice chirurgy thruought this whole colony and is by this court styled and recorded Doctor of Phissicke and Chirurgery by authority of this General Assembly of the Colony."

Robert Tucker at Kings College in 1770 was the first doctor of Medicine graduated and getting degree as such from an American college.

John Winthrop, founder of Boston, sought for and received advice from an English doctor friend in 1643, in the form of a still existent document, the earliest document of American medical ethics.

"No man can with a good conscience take a fee or reward before ye partie receive benefit apparent: and then he is not to demand anything, that shall be so given him, for it comes from God.

"A man is not to neglect that partie, to whom he hath once administered, but to visit him at least once a day, and to meddle with no more that he can attend well. In so doing, he shall discharge a good conscience before God and Man."

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